HOUSE OF COMMONS SESSION 1997–98

AGRICULTURE COMMITTEE

Fourth Report

FOOD SAFETY

Volume II

Minutes of Evidence
and Appendices

Ordered by The House of Commons *to be printed*
22 April 1998

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HOUSE OF COMMONS SESSION 1997–98

AGRICULTURE COMMITTEE

Fourth Report

FOOD SAFETY

Volume II

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Food – Quality
Food – Safety measures

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The Agriculture Committee is appointed under Standing Order No 152 to examine the expenditure, administration and policy of the Ministry of Agriculture, Fisheries and Food and of associated public bodies.

The Committee consists of 11 Members. It has a quorum of three. Unless the House otherwise orders, all Members nominated to the Committee continue to be members of it for the remainder of the Parliament.

The Committee has power:

(a) to send for persons, papers and records, to sit notwithstanding any adjournment of the House, to adjourn from place to place, and to report from time to time;

(b) to appoint specialist advisers either to supply information which is not readily available or to elucidate matters of complexity within the Committee's order of reference;

(c) to communicate to any other such committee appointed under the same Standing Order (or to the Committee of Public Accounts, the Deregulation Committee and the Environmental Audit Committee) its evidence and any other documents relating to matters of common interest; and

(d) to meet concurrently with any other such committee for the purposes of deliberating, taking evidence, or considering draft reports.

The Committee was nominated on 14 July 1997.

The following were members of the Committee during the inquiry:

Mr Peter Luff (Chairman)

Mr Tim Collins	Ms Sally Keeble
Mr Andrew George	Mr Paul Marsden
Mr John Hayes	Mr Austin Mitchell
Mr Alan Hurst	Mrs Diana Organ
Ms Fiona Jones	Mr Mark Todd

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1. UK Federation of Milk Producer Organisations (C35)
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HOUSE OF COMMONS SESSION 1997–98

AGRICULTURE COMMITTEE

FOOD SAFETY

MINUTES OF EVIDENCE

Tuesday 11 November 1997
(*Afternoon*)

MINISTRY OF AGRICULTURE, FISHERIES AND FOOD
AND DEPARTMENT OF HEALTH
Mr Richard Carden, Mr Geoffrey Podger and Dr Eileen Rubery

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MINUTES OF EVIDENCE

TAKEN BEFORE THE AGRICULTURE COMMITTEE

TUESDAY 11 NOVEMBER 1997

(*Afternoon*)

Members present:

Mr Peter Luff, in the Chair

Mr John Hayes
Mr Alan Hurst
Ms Fiona Jones
Ms Sally Keeble
Mr Paul Marsden
Mrs Diana Organ
Mr Mark Todd

Memorandum submitted by the Ministry of Agriculture, Fisheries and Food, the Department of Health, Scottish Office, Welsh Office and Northern Ireland Office (C 58)

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PART 2: OTHER FOOD SAFETY ISSUES
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Assessing and Managing Risks from Chemicals in Food
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Food Contaminants
Dietary Supplements
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INTRODUCTION

1. This memorandum contains evidence submitted by the Government on issues of current concern relating to the safety of food in the UK. The Select Committee enquiry covers a very broad range of activity in Government, on which the memorandum endeavours to give a general overview, focusing most attention on those areas where there is current concern, in particular food poisoning and the microbiological safety of food. The Committee will wish to note that this memorandum does not consider the food safety implications of BSE in great depth on the assumption that it is not identified as the focus of the Committee's more general enquiry.

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2. Consumers are entitled to expect the very highest standards of food safety and rightly look to Government to identify and act on food safety risks which have implications for public health. To enable it to carry out its responsibilities to protect the public the Government needs access to the best scientific advice and information about the safety of the food supply. It relies heavily on the advice of a network of independent advisory committees which bring together experts in the fields concerned, as well as its own scientific staff, to assess the risk and advise on the most appropriate course of action to take. This advice is supported by the conclusions of independently commissioned scientific research and surveillance programmes. The Government also believes it is important for the scientific evidence to be put in the context of consumer perception and understanding of food safety risk, to ensure that its advice can be trusted and acted on by the public. It is therefore increasingly involving lay members in its advisory committees and consults widely with interested parties before taking action.

3. The first part of this memorandum deals with the microbiological safety of food. Chapter 1 provides the context by describing the nature of food poisoning and the characteristics of food poisoning organisms. The majority of reported food poisoning is accounted for by only a handful of different micro-organisms, and about 90 per cent of cases are caused by *Campylobacter* and *Salmonella.* The source of these organisms is mainly poultry and livestock. Infection by or ingestion of toxin or micro-organisms does not inevitably lead to illness, depending on the state of health of the person concerned and circumstances of exposure. Observance of the three basic rules of hygienic practice (store food at the right temperature, cook food thoroughly, avoid cross-contamination) will, in general, help to prevent food poisoning. In practice, despite the best efforts of those concerned with food safety, it is not possible to assure complete observance of best hygienic practice at all times.

4. Chapter 2 outlines the systems for identifying food poisoning cases in the UK. None of the three ways of monitoring the prevalence of food poisoning (notification by GPs, laboratory reports of gastro-intestinal illness, reports of outbreaks) is completely reliable, and they can therefore only be used to indicate major trends. In addition, there is assumed to be considerable under-reporting of food poisoning. The results of a study into infectious intestinal diseases (the IID study) which are due next year, should provide a more precise estimate of the overall incidence of illness and will give essential information to improve the Government's ability to tackle the problem of food poisoning.

5. Chapter 3 describes trends in the incidence of food poisoning in the UK, and places them in a global context. Food poisoning notifications in the UK have been rising throughout the 1980s and 1990s, although this rise is not reflected by trends in GP consultations for infectious intestinal disease which are much higher and have not increased over the last seven years. This disparity indicates that there is significant under-reporting of food poisoning in the UK. Of the food poisoning cases that are reported, most are thought to be due to *Salmonella* and *Campylobacter* based on data from laboratory reports. Overall the number of laboratory reports for *E. coli* O157 are much lower (although the rates in Scotland are higher than in the rest of the UK). Cases of listeriosis have been falling since the late 1980s across the whole of the UK. Northern Ireland seems to have a significantly lower rate of food poisoning than the rest of the United Kingdom. The trends in food poisoning in the UK reflect a situation common to many western countries, with a rise in *Campylobacter* infections being a particularly noticeable world-wide trend.

6. The framework within which the Government is tackling the problem is outlined in Chapters 4 and 5. Tackling the problem of food poisoning requires a two pronged approach: identifying and reducing the prevalence of human pathogens in the food chain; and putting in place measures to promote good hygiene practices throughout the food chain in order to minimise the risk where pathogens are present.

7. Chapter 4 describes the basic legal framework and the role of expert advisory committees, research and surveillance. The Food Safety Act 1990 prohibits the sale of unsafe food and provides, for those prosecuted, a due diligence defence. This has in practice the effect of putting the onus on food businesses to ensure that the appropriate checks are carried out to ensure that the food they offer for sale is safe. In addition to the general controls of the Food Safety Act 1990, there are many hygiene regulations which flow from European law. Government receives advice from expert advisory committees, and undertakes surveillance and research to fill gaps in knowledge and understanding. There is an international consensus, reflected in the direction of legislation, that the application of HACCP (Hazard Analysis and Critical Control Point) is the best way to ensure food safety. This requires food businesses to understand and identify potential hazards, and to apply procedures to avoid them.

8. Chapter 5 explains the Government's approach for reducing the potential for contamination, to the extent practicable, at all stages of the food chain from farm to fork. It considers the extent to which the main human pathogens are present in farm animals where this is known and the measures are available for controlling them. Many human pathogens do not commonly give rise to disease in animals and there are practical difficulties in controlling their spread on farm. The slaughterhouse therefore becomes a crucial point in preventing the spread of pathogens, and much can be achieved by the application of good hygiene standards in slaughterhouses. This chapter describes the ways in which the Government is tightening up on standards in slaughterhouses, through the stringent application of existing controls, and through the introduction of new policies such as a clean livestock strategy. It also describes the ways in which the

Government is promoting good hygiene practices throughout the retail and distribution chain and in the home, in particular through the accelerated implementation of HACCP-based safety controls in butchers' shops, for which an additional £19 million of Government funding has been made available.

9. The second part of the memorandum goes on to consider the risks posed by non-microbiological hazards in food and the ways they are managed. Chapter 6 describes the principles of risk analysis and the different stages in the process and emphasises the need for communication between all parties involved throughout the process. The Government recognises this need and is taking appropriate action. For example, the new arrangements for publishing survey results will improve openness and provide consumers with more information about the safety and quality of food.

10. The rest of Chapter 6 describes in more detail developments in specific areas. The first section deals with chemical contaminants covering a range of toxic chemicals which are not intentionally added to food but which are present as a result of contamination at some stage of the food production process. Results from the surveillance programme show that concentrations of most chemical contaminants in food are generally well below levels that pose a risk to health. In contrast to microbiological contaminants, acute risks to health occur very rarely although this is not necessarily the perception of consumers. The Government's approach is one of prudence and it seeks generally to reduce chemical contamination to a level "as low as reasonably achievable". This policy has had some success. For example, recent surveys have shown that levels in food of many environmental contaminants (eg lead, dioxins) are decreasing largely due to improved controls on industrial emissions. The recent concern about the possible adverse effects of certain chemicals on the human endocrine system has led to the development of a sizeable programme of research into this area. Food allergies are also potentially life-threatening and the Government is putting considerable resources into identifying the causes of severe reactions to food and is actively seeking to raise the awareness of industry and caterers to the problem.

11. The second major group, food additives, comprise substances deliberately added to food for technological reasons. Their use is only permitted if independent expert committees are satisfied that a clear case of need exists and that they will not endanger public health. Intakes are then carefully monitored to ensure that they do not exceed the limits laid down.

12. Chapter 7 deals with the way in which the risks of radioactivity in the food chain are monitored and managed. It is generally (although not universally) accepted that radiation can cause cancer, and that any increase in dose is associated with a finite increase in the probability of cancer induction. Natural radionuclides are present throughout the food-chain and contribute to the natural background radiation. Radionuclides are also present as a result of discharges from nuclear sites and from fallout from weapons tests and nuclear accidents, notably Chernobyl. Radionuclides in the terrestrial and aquatic food-chain are subject to a large programme of routine surveillance, published annually. The latest results confirm that natural background is by far the biggest source of radiation dose to consumers, dwarfing even the highest additional doses attributable to the nuclear industry which remain well within international limits. Controls are still in place on the movement of sheep from some areas contaminated as a result of the Chernobyl accident, and plans for response to any future accident are exercised regularly.

13. Chemicals used on farm to treat animals or protect crops are also relevant to food safety, and they are subject to rigorous controls in the UK. The regulatory framework for veterinary medicines is dealt with in Chapter 9 and that for pesticides in Chapter 8. These chapters outline the comprehensive authorisation and monitoring procedures, and explain the central role played by independent advisory committees. In order to get their products authorised, manufacturers must demonstrate, amongst other things, that their veterinary drugs or pesticides are safe to workers handling them, to consumers of foods produced from plants or animals treated with them, and to the environment. Authorisation is backed up by open and accessible systems of surveillance to monitor residues resulting from use or misuse of products, and measures are taken to identify and prosecute those who misuse them.

14. Advances in technology have historically resulted in consumer anxiety, and recent developments relating to genetically modified organisms in the food chain have prompted some to express concerns about safety and choice. Chapter 10 details the regulatory framework which is in place to protect the consumer, and explains how the UK assesses the safety of GM foods in accordance with international best practice and the principles of openness and transparency. These arrangements—in which the independent Advisory Committee on Novel Foods and Processes plays a key role—ensure that genetically modified foods are able to reach the market only if they satisfy exacting safety criteria. However, the Government recognises that many consumers want to be able to make up their own minds about whether to eat foods resulting from genetic modification. It is therefore promoting a policy of ensuring that all foods which contain genetically modified ingredients are clearly labelled.

15. Food irradiation is another relatively new technology, and one which has the potential to contribute to an improvement in food safety. However, the use of radioactivity carries negative connotations for many people, and despite having become increasingly common outside Europe, the practice has yet to find favour

in the UK. Chapter 11 describes the potential applications of the technology, and details the stringent controls which apply to the production and marketing of irradiated food in this country, including the requirement for labelling. Surveillance, summarised in the chapter, has shown a very high level of compliance in this area.

16. Finally, Chapter 12 of the memorandum turns to a discussion of the regulatory framework which applies to animal feedingstuffs. What animals eat may affect not only their own health and welfare but also the safety of the humans who consume the products coming from them. Manufacturers of additives and novel proteins used in animal feedingstuffs are required to demonstrate that their products are safe to humans handling them and to human consumers of foods derived from animals given feed containing them. Because of BSE, there are also strict controls on animal feeds designed to eliminate the disease from the UK herd. These controls largely ante-date the 1996 crisis. The chapter also explains the requirements for declaring feed ingredients, and for labelling genetically-modified feedingstuffs, and outlines the measures which are in place to control *Salmonella* in poultry.

The Way Forward

17. This memorandum covers some of the issues which will fall within the remit of the proposed Food Standards Agency, though it is envisaged that the Agency's responsibilities will extend more widely than food safety and will include food standards and nutrition matters. The Agency itself, once established, will inherit responsibility for many of these issues from Government departments and, where it does not take on direct responsibility, will need to be actively involved, in co-ordination with Government Departments, in raising food safety standards. However, the Agency itself will be independent of direct Government control and may, once established, want to develop new policy approaches, acting within the framework of its legal obligations.

18. The Government expects to publish a White Paper setting out its proposals for the Food Standards Agency for further consultation shortly.

1. The Nature of Food Poisoning and the Characteristics of Food Poisoning Organisms

1.1 Most laboratory reports of food poisoning in the UK are a consequence of infection from a relatively small number of different organisms, as illustrated in Table 1.

Table 1

NUMBER OF LABORATORY REPORTS OF FOOD POISONING IN UK IN 1996

Pathogen	*Number of cases 1996**
Campylobacter species	48,990
Salmonella species[1]	32,813
Small Round Structured Viruses (SRSVs)	2,477
E. Coli O157	1,180
Listeria monocytogenes	127

*Provisional data from CDSC, SCIEH, and DHSS NI
[1]Excluding *S. typhi* and *S. paratyphi*

Campylobacter and *Salmonella* species together account for some 95 per cent of cases of food poisoning due to these five pathogens. Of lesser importance in terms of numbers, (but not in potential severity of illness), are *E. coli* O157 and *Listeria monocytogenes.* Other organisms account for a handful of cases annually. Food poisoning due to *Clostridium botulinum* is a rare occurrence in the UK.

1.2 Food poisoning symptoms include diarrhoea, vomiting, abdominal pain, fever and jaundice. In most cases recovery takes from a few days to a few weeks. Although death from food poisoning diseases is rare, some infections can lead to serious and long term illness affecting the renal, respiratory, cardiovascular or immune systems. For example, some types of bacterial gastro-enteritis, typically salmonellosis and campylobacteriosis, may precipitate reactive arthritis. Campylobacteriosis has also been linked with the development of Guillain-Barré syndrome, a paralysing peripheral neuropathy. Twenty per cent of cases are left with permanent disability and the case fatality rate is 5–10 per cent. Infection by E. coli O157 can develop into haemolytic uraemic syndrome characterised by acute renal failure and anaemia. Such long-term clinical complications are likely to add significantly to the socio-economic burden of food poisoning.

1.3 Not all those exposed to the infectious agent or toxin will develop symptoms. Whether or not illness will result from exposure is determined by the "disease triangle", ie the interaction between:

- the state of health of the person exposed;
- the virulence of the organism or potency of the toxin; and
- the effects of the food or environment on both of the above.

1.4 Infection from these organisms is not in all cases through the consumption of food. Other sources of infection comprise humans and animals, their waste products, and the environment. In most reported cases it is not possible to distinguish foodborne infection from infection via other routes.

1.5 The Richmond Committee distinguished between the sources and causes of food poisoning. The source of food poisoning is the origin of the potentially infecting micro-organism (as set out in Table 2). The cause of food poisoning is the change in circumstances that provides the opportunity for illness to occur.

Table 2

SOURCES OF MAJOR PATHOGENS

Pathogen	*Source*
Campylobacter species	Poultry and livestock
Salmonella species	Poultry and livestock
SRSVs	Sewage
E. Coli O157	Livestock
Listeria monocytogenes	Widely distributed in the environment
	Poultry and livestock

1.6 *Salmonella* species and *Campylobacter* species arise from poultry and livestock, and food poisoning from these organisms can occur through consumption of contaminated products (eg through undercooking of meat) or through poor handling and cross contamination. Food poisoning from *E. coli* O157 arises in a similar way from the reservoir of the organism in livestock. *Listeria monocytogenes* is widely distributed in the environment but can also be transmitted from animals to food via faeces. *Clostridium botulinum* is also widespread in the environment, and will grow in food when the conditions are right. Given that viruses such as Small Round Structured Viruses (SRSVs) are incapable of growing in food it seems likely that the environment, in this case recycling via waste disposal into the sea thence into shellfish and thereby back to humans, forms the major source of foodborne infection. Person to person spread of many pathogens is well documented, particularly airborne spread of SRSVs.

1.7 The cause of food poisoning is the change in circumstances whereby the micro-organisms from the source breach defences and cause illness. A number of causes are thought to contribute to an increase in the prevalence of food poisoning, namely:

- lack of hygiene awareness;
- changes in lifestyles and habits;
- poor control in some food technologies; and
- international travel and commerce.

1.8 For most common pathogens (*Campylobacter* species, *Salmonella* species, *E. coli* O157, *Listeria monocytogenes*, and viruses) it is the ingestion of the organism itself which causes the disease. These organisms are destroyed by the heat of normal cooking. For uncooked food, or cooked food consumed cold, it is important to avoid cross-contamination with raw meat or other sources of pathogens (eg pets, or faeces). With other pathogens, the illness is caused by toxins which the bacteria produce if allowed to grow on food, and these toxins vary in their heat stability. Illness is avoided by preventing the toxin formation, eg by storage at chill temperatures or by control of acidity. Table 3 provides a summary.

Table 3

Characteristics of common pathogens

Pathogen	*Causal agent of illness*	*Principal conditions of control*
Campylobacter species	organism itself	cooking avoidance of cross-contamination
Salmonella species	organism itself	cooking avoidance of cross-contamination
E. coli O157	organism itself	cooking avoidance of cross-contamination
Listeria monocytogenes	organism itself	cooking avoidance of cross-contamination
SRSVs	organism itself	cooking avoidance of cross-contamination
Clostridium botulinum	toxin	cooking prevention of growth in foods
Staphylococcus aureus	toxin	cooking avoidance of cross-contamination prevention of growth in foods
Bacillus cereus	toxin	cooking prevention of growth in foods

1.9. These characteristics of foodborne pathogens give rise to the three basic principles of good hygienic practice:

- store food at the right temperature;
- cook food thoroughly; and
- avoid cross-contamination between raw meat and any food ready to eat.

As a general principle, the observance of these principles in food businesses and the home will prevent food poisoning.

2. THE SYSTEM FOR IDENTIFYING FOOD POISONING CASES IN THE UK

Introduction

2.1 For the purposes of collecting statistics the definition of food poisoning* includes:

- all food or waterborne illness regardless of the presenting symptoms and signs (thus it includes not only acute illnesses characterised by diarrhoea and/or vomiting, but also illnesses presenting with manifestations not related to the gastrointestinal tract)
- illness caused by toxic chemicals irrespective of origin, whether these are naturally occurring inorganic compounds or of biological or man-made origin.

For practical purposes the vast majority of reported cases of food poisoning are of microbiological origin.

National System in England and Wales

2.2 Information in relation to food poisoning in England and Wales is collected and analysed by the Public Health Laboratory Service's (PHLS) Communicable Disease Surveillance Centre (CDSC). The majority of information is obtained from three major sources:

- food poisoning notifications;
- laboratory confirmed infections of micro-organisms which may be foodborne; and

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*The term food poisoning is not defined in the Public Health (Control of Diseases) Act 1984. In 1992 the Advisory Committee on the Microbiological Safety of Food (ACMSF) defined food poisoning as "any disease of an infectious or toxic nature caused by or thought to be caused by the consumption of food and water". This definition was accepted for use throughout the UK and was circulated to all doctors in 1992. The same definition has been adopted by the World Health Organisation. It has been used in Scotland since 1980.

— reports of general outbreaks of infectious disease.

Food poisoning notification data complement the laboratory reporting system, the former being based on clinical diagnosis and the latter on proven infections. Both systems in turn assist in the identification of outbreaks and in the monitoring of trends in food poisoning[1].

Food Poisoning Notifications

2.3 Doctors in England and Wales have a statutory duty to notify a "proper officer" of the local authority of cases (or suspected cases) of food poisoning. The notification is based on the clinical picture and is not always confirmed microbiologically. The CDSC collates these reports on individual cases of food poisoning but not details of the microbiological cause or food source of the illness. In practice, formal notification is believed to be markedly incomplete with respect to "true" incidence.

2.4 "Otherwise ascertained" notifications of food poisoning are suspected cases which come to the notice of the local authority, but which are not formally notified by a doctor. For example, they may come from direct reports from diagnostic laboratories, Environmental Health Officers (EHOs) investigating outbreaks in the community, information from the public or proprietors of food businesses.

Laboratory Reporting System

2.5 The CDSC receives laboratory reports of gastrointestinal pathogens, isolated from humans under a voluntary, non-statutory laboratory reporting system involving PHLS, NHS and a small number of private laboratories. The reports are based on microbiological examination of faecal specimens from patients following referral by a doctor. The reports do not include laboratory isolations of gastrointestinal pathogens from food or environmental samples.

2.6 *Salmonella* is unique among the foodborne pathogens as over 90 per cent of human isolates are forwarded to the national reference laboratory, the PHLS Laboratory of Enteric Pathogens (LEP), for confirmation and further identification. The PHLS *Campylobacter* Reference Unit at LEP also now provides a comprehensive reference service for two NHS Regions and outbreak investigation facilities from all regions. In addition, all clinical laboratories in England and Wales are encouraged to send isolates of *E. coli* O157 to the LEP for further identification and definitive typing. The national returns on the incidence of verocytotoxin producing *E. coli* O157 are based on LEP data. Further information on organisms such as *Bacillus cereus, Clostridium perfringens, Listeria monocytogenes* and *Staphyloccus aureus* come from the results of typing and/or toxin testing carried out in the PHLS's Food Hygiene Laboratory (FHL). The FHL provides national (England, Wales, Scotland and Northern Ireland) reference facilities for this work. In addition, the FHL is the sole source of information in England and Wales on scombrotoxin and marine biotoxin poisoning such as diarrhetic shellfish poisoning (DSP).

2.7 The vast majority of laboratory reports are thought to be associated with sporadic cases of infectious intestinal disease. In such sporadic cases it is usually not possible to link the illness with the consumption of a particular food. Depending on the organism, laboratory reports will include non-foodborne cases which have resulted from person-to-person spread. Although laboratory reports give an incomplete picture of the national situation, they are helpful in identifying trends and detect outbreaks.

Outbreaks of Infectious Intestinal Disease

2.8 An outbreak is an incident in which two or more people contract food poisoning which is thought to have a common source. Some outbreaks become apparent rapidly, whereas others take time for the information to become available as they develop over a long period. Once an outbreak is identified information is collected in a structured way. A questionnaire is used to collect relevant details of setting, mode of transmission, causative organism and details of epidemiological and laboratory investigations. The evidence for suspecting a food as a source of an outbreak is ideally based on analytical epidemiology, demonstrating a statistically significant association between consumption of food and illness, and isolation of the same strain of pathogen from food and clinical samples. Evidence may also be based on descriptive epidemiology which suggests that the outbreak is food related and excludes alternative explanations, with or without supporting microbiological evidence.

National System in Scotland

Notifications of Food Poisoning

2.9 In terms of the Public Health (Notification of Infectious Diseases) (Scotland) Regulations 1988, a medical practitioner attending a patient suffering from food poisoning has a duty to notify the Chief Administrative Medical Officer (CAMO) of the Health Board for the area. CAMOs are required to send a weekly return of notified cases to the Information and Statistics Division (ISD) of the Common Services Agency and must also report any serious incidents to the Chief Medical Officer.

2.10 In practice, CAMOs normally delegate this responsibility to Consultants in Public Health Medicine (CsPHM, Communicable Diseases/Environment Health (CD/EH)). These CsPHM (CD/EH) may also receive reports of cases of food poisoning from other sources such as laboratories and Local Authority Environmental Health Officers, and include such cases in the weekly returns to ISD. Notification data are collated by ISD and published in the Scottish Centre for Infection and Environmental Health (SCIEH) Weekly Report.

2.11 In Scotland, prior to 1996, disease due to laboratory confirmed *Campylobacter* infection was excluded from the published total for "food poisoning". However, during part of 1995 and since the beginning of 1996 ISD has combined "food poisoning excluding *Campylobacter*" with "*Campylobacter* notified as food poisoning" into a single category. This change was in response to the recommendation of the Advisory Committee on the Microbiological Safety of Food[2] that differing methods for collating and reporting data should be standardised across the UK, and that the WHO definition of food poisoning (in use in Scotland since 1980) should be adopted by the rest of the UK.

Laboratory Reports of Confirmed Infections

2.12 All Scottish NHS microbiology laboratories participate in a voluntary scheme of weekly reporting of human isolates to SCIEH. Collated data are published in the SCIEH Weekly Report. A list of "reportable infections" of particular interest was compiled by SCIEH in 1989 and includes a number of organisms related to food poisoning. Reference laboratories provide additional expertise with regard to identification and typing of organisms such as *Salmonella, Campylobacter* and *E. coli* O157.

Outbreak Reports

2.13 Since 1980 Scotland, like England and Wales, has participated in the WHO European Surveillance Programme for Foodborne Infections and Intoxications. Relevant summary data relating to the numbers affected, the organisms responsible, the foodstuffs implicated and other relevant factors are provided by Health Boards and collected, collated and analysed by SCIEH. Initially this programme gathered information on general community and household outbreaks but since 1995 only general community outbreaks have been included. On 1 January 1996 an improved system for the surveillance of general outbreaks of infectious intestinal disease started in Scotland comparable to that successfully run in England and Wales since 1992.

System in Northern Ireland

2.14 Information on food poisoning cases in Northern Ireland is collected and analysed by the Department of Health and Social Services. The information is obtained from 2 major sources, food poisoning notifications and reporting of laboratory confirmed infections. Information is also collected on general outbreaks of infectious intestinal disease.

Food poisoning notifications

2.15 Under the Public Health Act (Northern Ireland) 1967 all medical practitioners attending patients suffering, or suspected to be suffering, from notifiable infectious diseases are required to inform the Director of Public Health (DPH) of their local Health & Social Services Board. In addition, hospital laboratories voluntarily report an agreed list of microbiology results to the Director of Public Health. Laboratory reports of suspected food poisoning are included in the totals of notifiable disease which are forwarded weekly to the Regional Information Branch of the Department of Health and Social Services.

Laboratory Reporting System

2.16 Laboratories report a comprehensive list of microbiological data to DHSS NI. This list is largely the same as that used in England and Wales by the PHLS CDSC. This reporting is voluntary and covers all the laboratories in Northern Ireland. These laboratory data and the notifiable disease statistics are published by DHSS NI in the monthly report (Communicable Disease, Northern Ireland).

Outbreaks of infectious intestinal disease

2.17 The Consultants in Communicable Disease Control of Health and Social Service Boards report general outbreaks to DHSS and on request complete a questionnaire which is similar to that used in England and Wales.

Problems with the present system

Food poisoning notifications

2.18 Food poisoning notifications provide information on the trend in food poisoning and not the true extent of foodborne illness. Although food poisoning is a notifiable disease there is thought to be substantial under-reporting by doctors. It is also probable that the vast majority of people who contract food poisoning do not seek medical attention. Since 1993, 40 per cent of notifications in England and Wales have been ascertained by means other than formal notifications emphasising deficiencies in the system. The total number of notifications has risen since 1992, however, possibly due in part to greater awareness amongst doctors following circulation of the food poisoning definition.

Laboratory Confirmed Infections

2.19 This also provides a significant underestimate of the true incidence of foodborne infections since not all cases seek medical attention and only a proportion of these have a specimen submitted for analysis. Not all of these will have a pathogen identified and not all pathogens identified will be reported to the CDSC, SCIEH or DHSS-NI. In England and Wales, the reporting is variable with about half of the reports coming from PHLS laboratories and half from NHS and a small number of private laboratories. Reporting is a requirement for PHLS laboratories and is voluntary for other laboratories.

Outbreaks

2.20 A limitation of the general outbreaks surveillance scheme is that it is voluntary and there is no requirement for investigators to participate. In addition the scheme is prone to bias in a number of areas. Outbreaks that affect a defined set of people, for example those attending a particular social function, are more likely to be identified by the system than those where cases are spread more widely through a community. The questionnaires are completed by a wide range of people providing a variety of information. It is the reporter who determines the mode of transmission on the basis of this information. Different reporters may classify similar outbreaks differently. In addition, while microbiological or statistical evidence implicating a food is objective, descriptive or circumstantial evidence may be subjective, especially when numbers are small.

2.21 There are also regional variations in the reporting of outbreaks. Although variations in the incidence of outbreaks may reflect genuine regional differences, they may also be due to variations in investigation policies, resources available for outbreak investigation and enthusiasm for reporting to CDSC.

The IID Study

2.22 The recognised inadequacies of the current system led the Richmond Committee to recommend studies:

- of the incidence of infectious intestinal disease (IID) based on GP consultations in which microbiological confirmation of the diagnosis is carried out; and
- of the incidence of IID in the community that can be linked to a microbiological cause.

2.23 In response to these recommendations the Department of Health has funded a major study of human infectious intestinal disease in England (the IID Study). Set up in 1993, the study has taken place over three years involving 70 General Practices of the MRC's General Practice Research Framework. It is a collaborative venture between DH, the Medical Research Council (MRC), PHLS, Centre for Applied Microbiology and Research (CAMR) and the London School of Hygiene and Tropical Medicine (LSHTM).

2.24 The aim of the IID Study is to establish a better estimate of the level and causes of infectious intestinal disease in England. Field and laboratory work has now been completed and DH expects to receive a report on the study by the end of 1997. Preliminary indications support the view that the current system significantly underestimates the true magnitude of infectious intestinal disease. The Scottish Office Department of Health is funding a similar type of study in Scotland. This will run until March 1998.

GP Sentinel Practice Scheme

2.25 An additional source of data on infectious disease in the community is the Royal College of General Practice (RCGP) Weekly Returns service from its sentinel practice scheme. The scheme involves 91 general practices and approximately 598,000 patients[3]. Newly acquired episodes of clinical cases of IID are recorded and this enables an approximate rate of GP consultations for infectious intestinal disease per 100,000 population to be calculated. It should be emphasised that microbiological analysis is not conducted and not all cases of IID will be due to food poisoning.

2.26 The continuous Morbidity Recording Survey of Consultations in Primary Care in Scotland is based on a representative sample of 53 general practices in Scotland involving a population of 200,000, and will provide information on the rate of GP consultation relating to infectious intestinal disease.

Enhanced Surveillance System for Food Poisoning

2.27 In addition to the national sources, environmental health officers (EHOs) may receive local information about cases of food poisoning (eg information direct from the public). There are obvious benefits in carrying out further investigations of cases of illness as this provides information on possible food sources, hygiene practices in the home, etc. EHOs undertake such investigations but there is widespread variation in the way they are carried out. Some investigate all cases whilst others only look at certain cases.

2.28 This lack of uniformity in data collection means that the information cannot be used to its full potential either locally or nationally. This problem is currently being addressed through a Department of Health-funded study to develop a comprehensive, standardised system for the investigation of cases of food poisoning. The main aim of the study is to ensure that routine information collected by different local authorities is compatible so that they can be collated regionally and nationally and contribute to a better understanding of the routes and causes of food poisoning.

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[1] Wall PG, de Louvois J, Gilbert R J, Rowe B. Food poisoning: notifications, laboratory reports, and outbreaks—where do the statistics come from and what do they mean? Communicable Disease Report Review 1996; 6: 93-99.

[2] ACMSF Report of Progress 1990–1992 HMSO London 1993.

[3] Fleming D M, Crombie D L, Ross A M. Birmingham Research Unit of the Royal College of General Practitioners Weekly Returns Service Report for 1996. June 1997.

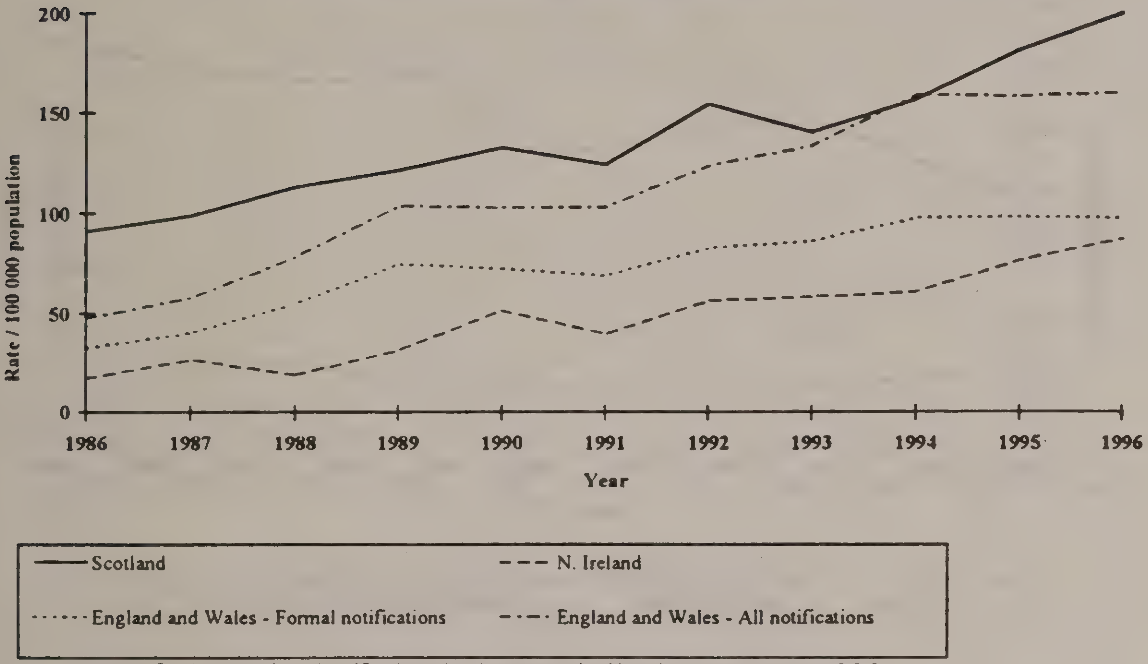
3. TRENDS IN THE INCIDENCE OF FOOD POISONING

Food poisoning notifications

3.1 Food poisoning notifications have been rising throughout the 1980s and 1990s (Figure 1). In 1997, provisional figures for the first six months in England and Wales, Scotland, and Northern Ireland were up 14 per cent, 11 per cent and 13 per cent respectively compared to the same period in 1996. This is consistent with existing trends. Over the period 1986–1996 the percentage of food poisoning cases in England and Wales presumed to have been contracted abroad ranged from 4.7 per cent to 9.8 per cent of the annual number of notifications. Rates of food poisoning are markedly lower in Northern Ireland. The reason for this is unknown. The rates for Scotland differ from those previously published which did not include *Campylobacter* notified as food poisoning.

Figure 1

FOOD POISONING NOTIFICATIONS ENGLAND AND WALES, SCOTLAND AND NORTHERN IRELAND 1986–1996



"All notifications" are formal notifications plus those ascertained by other means - see paras 2.3-2.4.

3.2 The upward trend in food poisoning is also associated with increased publicity which may in turn result in a further increase in notifications. Possible changes in notifying practice may also have led to an increase in food poisoning notifications. Some of this increase is probably attributable to changes in reporting and recording practices and some to increased availability of laboratory testing for organisms which cause infectious intestinal disease.

Salmonellosis

3.3 The number of laboratory reports of human faecal *Salmonella* isolates increased markedly during the 1980s but has remained fairly constant over the past five years (Figure 2). Provisional figures for all *Salmonellas* for the first six months in England and Wales, Scotland, and Northern Ireland were up 20 per cent, 15 per cent and 61 per cent respectively compared to the same period in 1996. *Salmonella enteritidis* and *S. typhimurium* are the most frequently isolated serotypes, with *S. enteritidis* PT4 the commonest phage type causing human salmonellosis (Figures 3 to 5). *S. typhimurium* DT104 has increased markedly in recent years and is now the second most prevalent phage type isolated from humans after *S. enteritidis* PT4. Rates of salmonellosis for all *Salmonella* species are markedly lower in Northern Ireland than in England and Wales or Scotland, although the rate has increased over the last few years. Between 1986 and 1996 at least 10–15 per cent of laboratory reports of *Salmonella* infection (including *S. typhi* and *S. paratyphi*) in England and Wales were thought to be associated with travel abroad.

Figure 2

SALMONELLOSIS: LABORATORY REPORTS OF FAECAL ISOLATES: ALL *SALMONELLAS* 1986–1996 (EXCEPT S.TYPHI AND S.PARATYPHI)

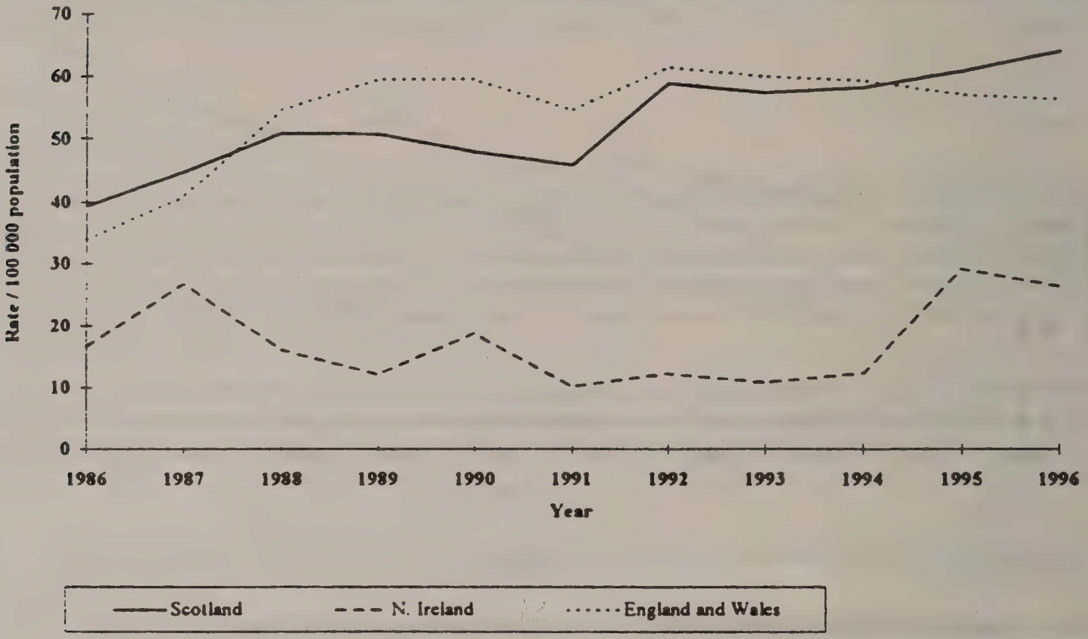


Figure 3

SALMONELLOSIS: LABORATORY REPORTS OF FAECAL ISOLATES: S.*ENTERITIDIS* 1986–1996

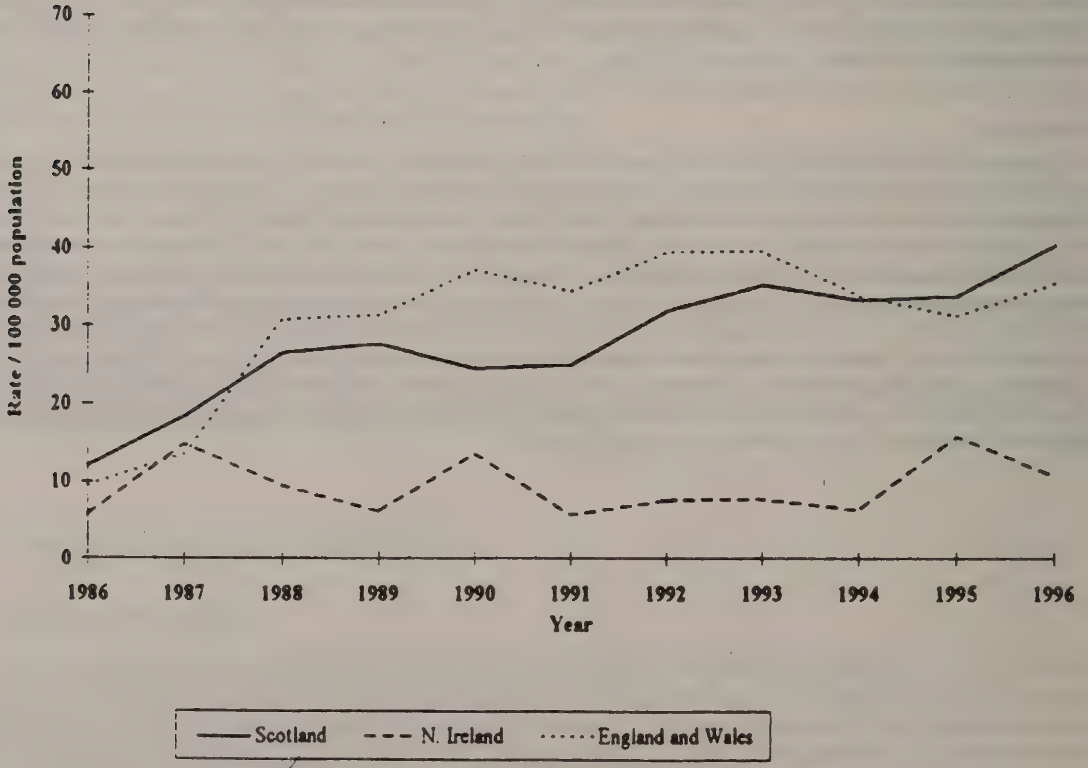


Figure 4

SALMONELLOSIS: LABORATORY REPORTS OF FAECAL ISOLATES: S.*TYPHIMURIUM*
1986–1996

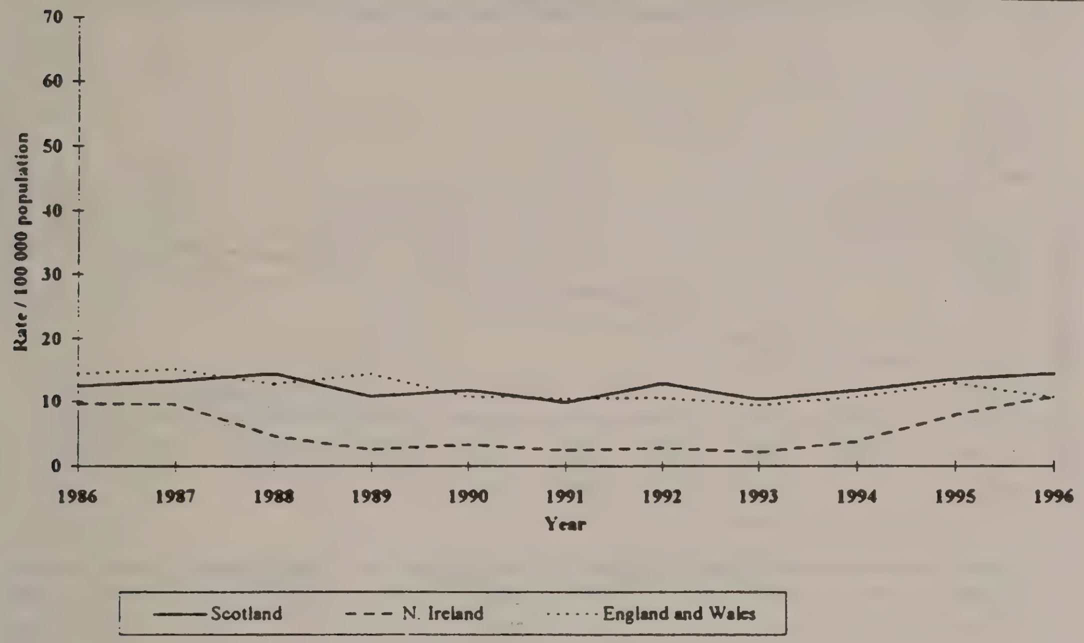


Figure 5

SALMONELLOSIS: LABORATORY REPORTS OF FAECAL ISOLATES: S.*ENTERITIDIS* PT4
1986–1996

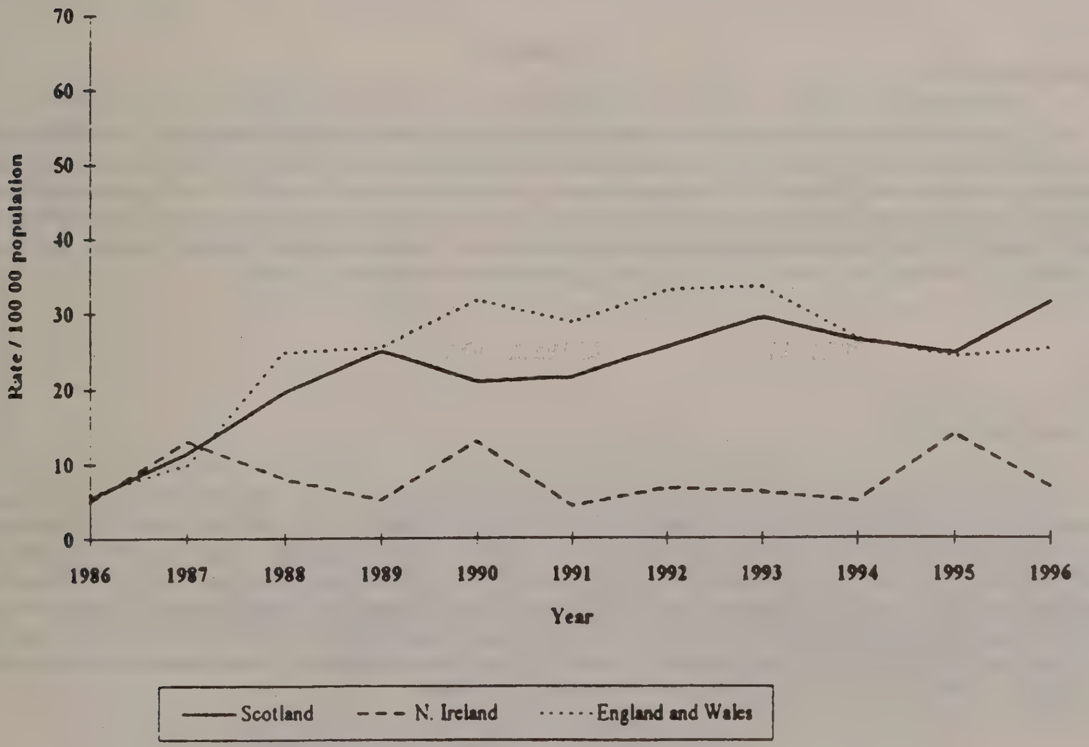
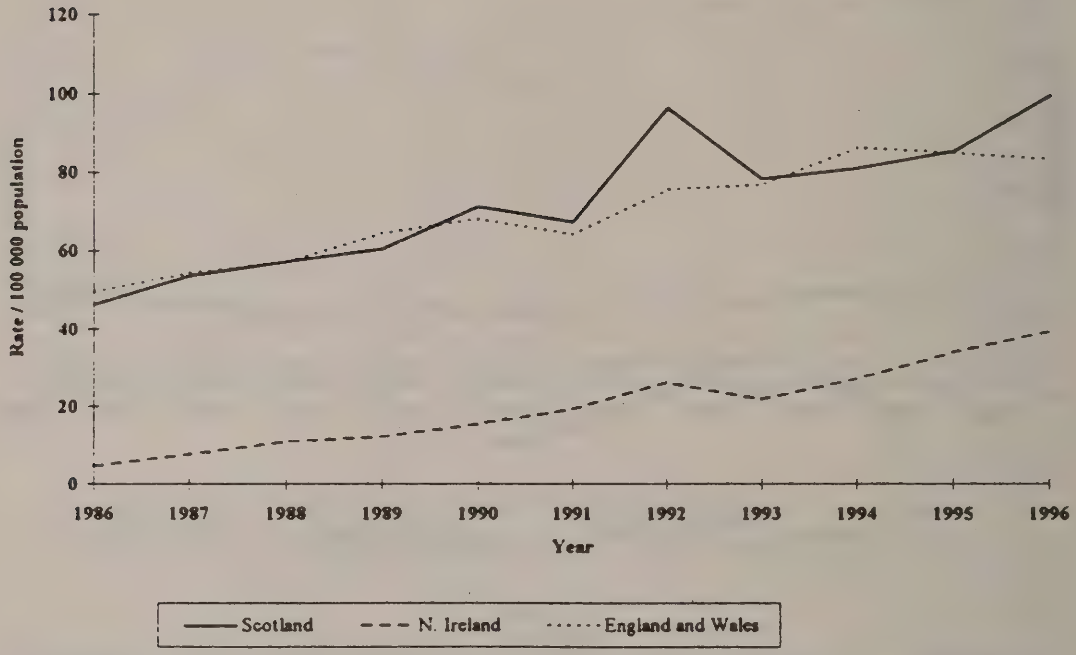


Figure 6

CAMPYLOBACTERIOSIS: LABORATORY REPORTS OF FAECAL ISOLATES: *CAMPYLOBACTER* 1986–1996



Campylobacteriosis

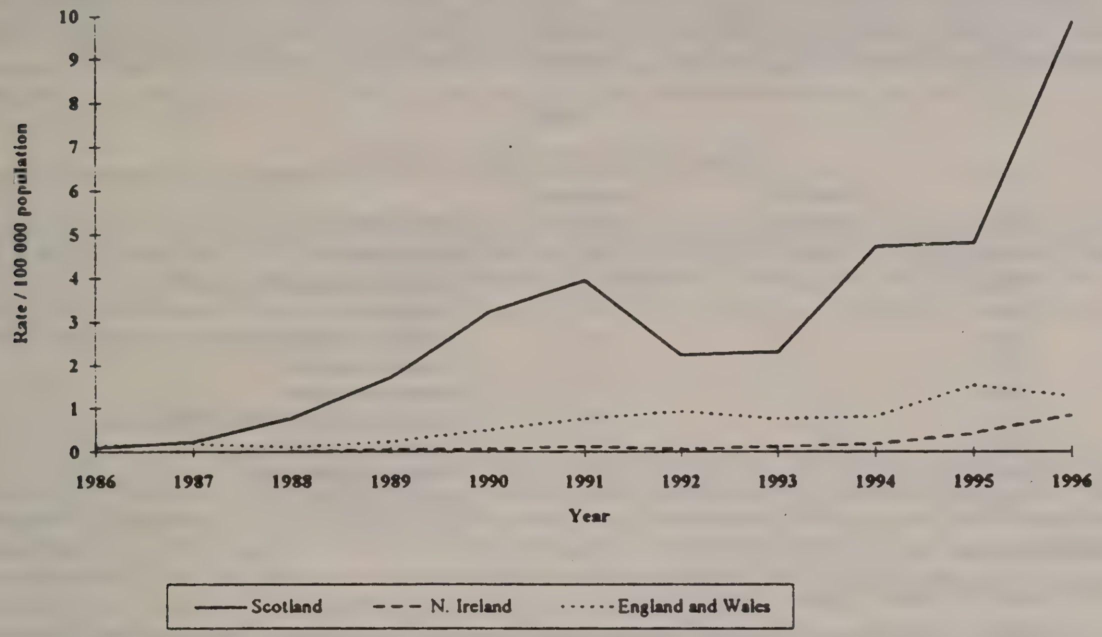
3.4 *Campylobacter* remains the most frequently isolated bacterium associated with acute gastroenteritis in humans in the UK. Over the past 10 years there has been a steady rise in the number of laboratory confirmed faecal isolates reported (Figure 6). Provisional figures for the first six months of 1997 in England and Wales, Scotland and Northern Ireland were up 16 per cent, 12 per cent and 41 per cent respectively compared to the same period in 1996. Rates of campylobacteriosis are lower in Northern Ireland than in England and Wales or Scotland although they also have increased significantly over the last 10 years.

Escherichia coli O157

3.5 *E. coli* O157 was first isolated from humans in the UK in 1982. Since 1982, there has been a steady increase in the number of laboratory confirmed faecal isolates (Figure 7). Provisional figures for the first six months of 1997 in England and Wales, Scotland and Northern Ireland were up 73 per cent, 281 per cent and 100 per cent respectively compared to the same period in 1996. The rise in recent years may be explained at least in part by the rapid implementation of the Advisory Committee on the Microbiological Safety of Food's recommendation in 1995 that all diarrhoeal stool specimens be examined for *E. coli* O157. The rates in England and Wales and Northern Ireland are much lower than in Scotland, even allowing for the Central Scotland outbreak in Lanarkshire and Forth Valley in late 1996.

Figure 7

ESCHERICHIA COLI O157:H7: LABORATORY REPORTS OF FAECAL ISOLATES 1986–96

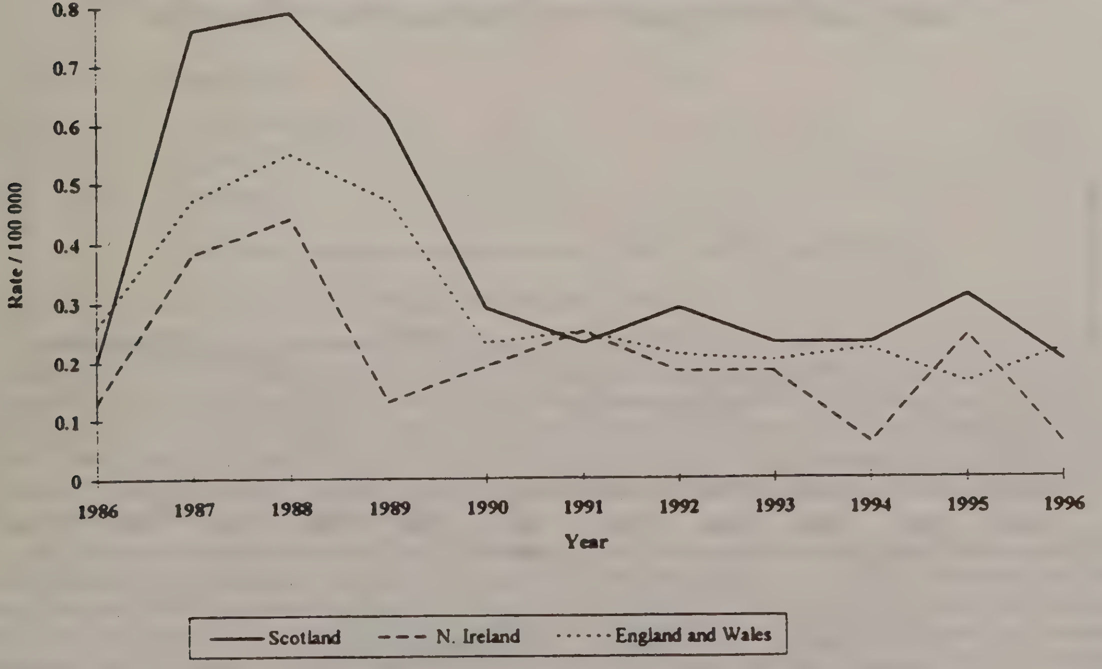


Listeriosis

3.6 The number of cases of listeriosis rose during the 1980s, reaching a peak in 1988. The number of cases then dropped markedly and has remained fairly constant since 1990 (Figure 8). This decline coincided with health warnings to vulnerable groups (e.g. pregnant women) by the CMO about eating foods associated with *Listeria* and action by industry to reduce contamination. The rate of listeriosis per 100,000 population is low and varies little between England and Wales, Scotland and Northern Ireland.

Figure 8

HUMAN LISTERIOSIS: LABORATORY REPORTS OF FAECAL ISOLATES 1986–96



Botulism

3.7 There have been no reported cases of foodborne botulism in the UK since 1989 when 27 cases were reported as part of a single community outbreak. This was the largest outbreak of botulism recorded in the UK. The causative agent was *Clostridium botulinum* type B and was traced to yoghurt flavoured with contaminated low calorie hazelnut conserve. Foodborne botulism is a rare event in the UK (Table 1).

Table 1

FOODBORNE BOTULISM IN THE UK

Year	*Number of Cases*	*Number of Deaths*	*Implicated Food*
1922	8	8	Duck pâté
1932	2	1	Rabbit and pigeon broth
1934	1	0	Jugged hare
1935	5?	4?	Vegetarian nut brawn
1935	1	1	Minced meat pie
1947	5	1	Macaroni cheese
1955	2	0	Pickled fish from Mauritius
1978	4	2	Canned salmon from USA
1987	1	0	Kosher airline meal
1989	27	1	Hazelnut yoghurt

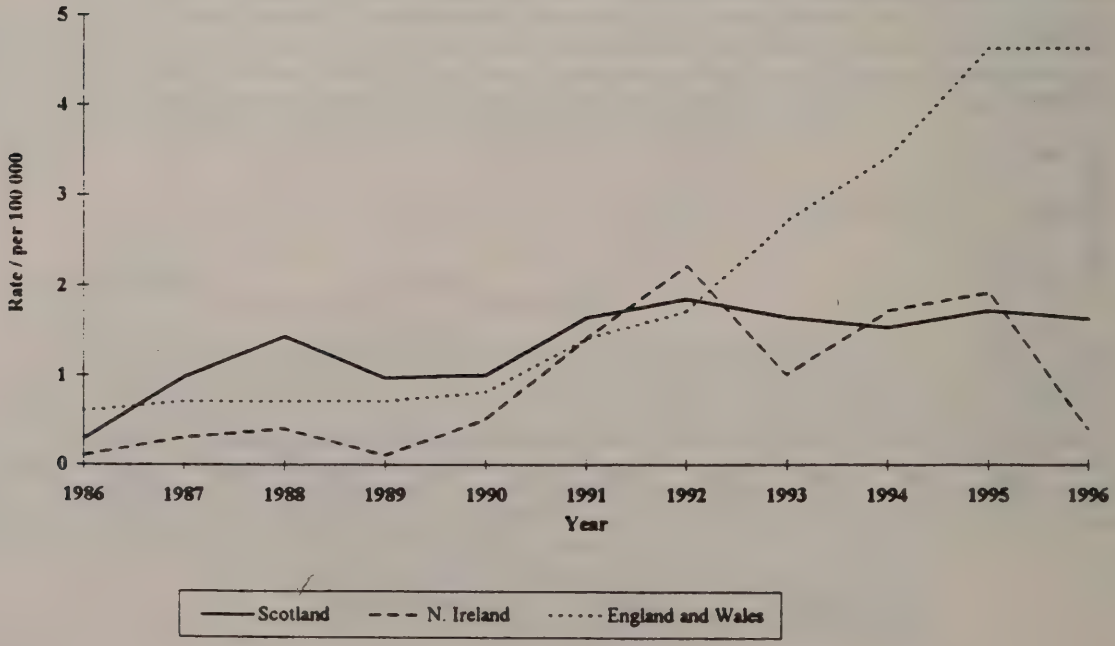
Viral infections

Small Round Structured Viruses

3.8 Small round structured viruses (SRSVs) are the major cause of outbreaks of foodborne viral infections in the UK. There are two main patterns of SRSV foodborne outbreaks—those in which an infected food handler is suspected as the source and those due to contaminated bivalve molluscan shellfish. Laboratory reports of SRSVs are higher in England and Wales than Scotland and Northern Ireland (Figure 9). SRSV laboratory reports in England and Wales increased steadily between 1986 and 1989, and then increased sharply from 0.82 cases per 100,000 in 1990 to 4.6 per 100,000 in 1996. Part of the increase may be due to increased awareness of SRSVs leading to increased referral of samples for investigation by electron microscopy. Provisional figures for the first six months of 1997 in England and Wales and Scotland were down 43 per cent and 54 per cent respectively compared to the same period in 1996. The level in Northern Ireland remains low with four laboratory reports of SRSV in the first six months of 1997 compared to three for the same period in 1996.

Figure 9

SRSVs: LABORATORY REPORTS OF FAECAL ISOLATES 1986–1996



Other Viruses

3.9 Foodborne viral hepatitis A infections have been associated with food handlers contaminating ready-to-eat food or, to a lesser extent, from consumption of raw or undercooked molluscan shellfish. However, these numbers are very low in comparison to SRSVs. Current epidemiological evidence suggests that Rotavirus, Adenovirus, Astrovirus and Classical Calicivirus are mainly paediatric infections giving rise to long term immunity into adult life. For this reason, foodborne infections with these viruses are rare.

Infections due to other organisms

3.10 Laboratory reports of other food poisoning organisms such as *Bacillus cereus, Shigella sonnei, Staphylococcus aureus,* and *Yersinia enterocolitica* are variable from year to year but in general have been falling since the mid to late 1980s. A small number of foodborne outbreaks are attributed annually to *Clostridium perfringens* infection (see table 2). Illness can also result from protozoa and algal toxins associated with shellfish (see paras 5.52–5.56).

Outbreaks of infectious intestinal disease

3.11 An enhanced surveillance system for foodborne outbreaks was introduced by the PHLS CDSC on 1 January 1992, following a recommendation of the Richmond Committee. This included a request for more detailed information on the suspect foods involved and the evidence for suspecting these foods (ie identification of pathogens in the food, demonstrating a statistically significant association between consumption of food and illness or descriptive epidemiology implicating the food). The system was adopted by SCIEH on 1 January 1996, allowing comparisons to be made for the first time.

3.12 SRSVs are now the commonest pathogens identified as being responsible for outbreaks of IID in the UK (Table 2), despite the small number of laboratory reports of SRSV compared to *Campylobacter* and *Salmonella* (2,477 compared to 81,803). Furthermore, outbreaks due to *Campylobacter* infection are rare compared to those caused by *Salmonella*: over 90 per cent of cases of *Salmonella* infection and over 99 per cent of *Campylobacter* infection being apparently sporadic.

Table 2

NUMBER OF REPORTED GENERAL OUTBREAKS OF IID IN THE UK IN 1996

Pathogen	*Number of outbreaks 1996**
SRVS	316
Salmonella	121
Clostridium perfringens	23
E. Coli O157	17
Campylobacter	9

*Provisional figures based on reports to CDSC, SCIEH and DHSS NI

Trends in GP consultations for IID—GP Sentinel Practice Scheme

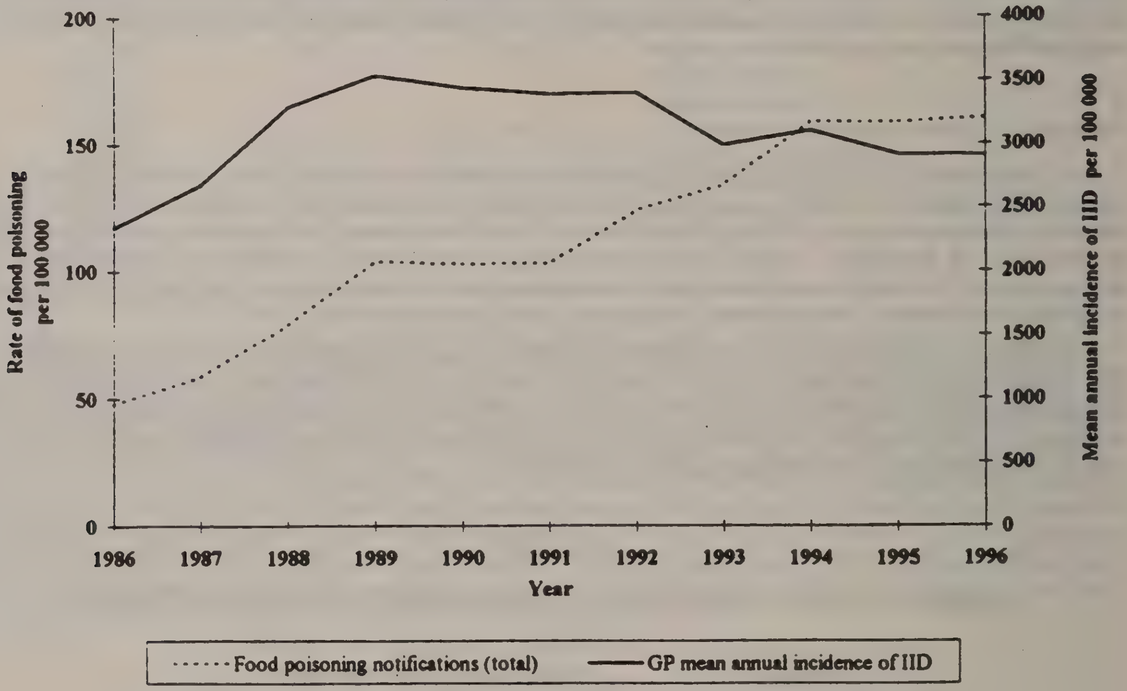
3.13 In England and Wales the annual rate of GP consultations for infectious intestinal disease (IID) reported to the GP Sentinel Practice Scheme (the Weekly Returns Service [WRS] of the Royal College of General Practitioners, Birmingham Research Unit) increased steadily in the late 1980s reaching a peak of 3,540 per 100,000 in 1989 (Figure 10). Since 1992 there has been a slight decrease in the rate of consultations, the 1996 rate being 2,909 per 100,000, the lowest rate since 1987. In the first six months of 1997 the downward trend continued with a mean weekly rate of 47.2 per 100,000 compared to 62.4 for the same period in 1996, a 32 per cent reduction in GP consultations for IID.

3.14 The rates of GP consultations for IID in England and Wales are very much greater than the rates for food poisoning notifications to the PHLS (Figure 10). In 1986 the annual rate of GP consultations for IID was 2,342 per 100,000 compared to a rate of 49 per 100,000 for food poisoning notifications, a ratio of almost 50:1. The ratio has decreased in the last 10 years as food poisoning notifications have steadily increased. However, in 1996 the rate of GP consultations was still over 18 times greater than the number of reported notifications of food poisoning. The definition of food poisoning (and thus the diseases classified under that definition) will not include all cases of IID and this could account for some of the disparity between the rates.

Notwithstanding these differences, the WRS appears to be a good indicator of the extent of under-reporting by GPs although it does not provide information on the level of IID in the community as not all cases of IID visit GPs.

Figure 10

FOOD POISONING NOTIFICATIONS (ENGLAND AND WALES) AND GP CONSULTATION RATES FOR IID (ENGLAND AND WALES) 1986–1996



World-wide trends in the incidence of food poisoning

3.15 Although there are shortcomings in the way that cases are reported in the UK, by international standards the UK has one of the better systems. Most countries have some form of reporting system for notifiable diseases although few have extensive food poisoning surveillance programmes. Even where food poisoning surveillance programmes exist there may be inherent weaknesses in the system leading to uncertainty about the robustness of the available information. For example, reports or notifications from some countries may not cover all diseases of foodborne origin because there may be different interpretations of the term "food poisoning". In addition, some countries only provide information on outbreaks of foodborne disease and numbers of persons involved whereas a smaller number of countries provide information on sporadic cases. This patchwork of information, comprising variations in the recognition of foodborne disease and the information reported, makes it difficult to define the magnitude of foodborne disease or to interpret and predict global trends. The collation of data on foodborne disease on an international basis is largely undertaken by WHO and is based on voluntary submissions by individual countries. There is no international requirement for countries to report foodborne disease, apart from cholera.

3.16 On the information that is available, it is clear that the problem of foodborne disease is one which is shared world-wide and that an apparent increase in the prevalence of some foodborne pathogens in the UK is a trend which is seen in a number of other countries. Of the foodborne diseases that are reported, salmonellosis appears to have either increased or remained steady as the main reported cause of food poisoning in practically all countries. In global terms campylobacteriosis may be more significant than salmonellosis. However, the situation is unclear because there is less data available and the organism is rarely linked to outbreaks.

Europe

3.17 Since 1980 the WHO have operated a Surveillance Programme for the Control of Foodborne Infections and Intoxications in Europe. The data on food poisoning notifications from this programme are limited as relatively few countries provide this information. With those that do there is no clear pattern, with the figures increasing for some, remaining stable for others and decreasing for a few[1]. The programme does provide information on the rate of salmonellosis, with the pattern in the UK matching that seen in many other European countries, ie rising through the mid to late 1980s and remaining relatively stable throughout the 1990s. However, the most recent data from the European Commission's Salm-Net programme (see paragraph 21) indicates a small upturn. In contrast, the incidence of campylobacteriosis appears to be continuing to rise with higher rates than for salmonellosis in some countries. Travel abroad to Mediterranean resorts and to Asian, African and Caribbean countries have been cited as a source of some gastrointestinal infections[1].

North America

3.18 In the United States, the incidence of salmonellosis reported to the Centres for Disease Control (CDC) has been rising in the last few years and has almost doubled from the levels reported in the 1970s. *E. Coli* O157 data are available only since 1994 with 1,420 cases for that year and 2,139 for 1995. In Canada, the incidence of salmonellosis decreased steadily from 1991 to 1995. For the same period, the incidence of campylobacteriosis increased, peaking in 1993.

Africa, Asia and South America

3.19 In Australia, laboratory reports of *Salmonella* and *Campylobacter* infections have increased between 1991 and 1995, and with numbers of isolations of *Campylobacter* being almost twice those for *Salmonella.*

3.20 Relatively little in the way of surveillance of foodborne disease is reported from Africa and Asia, except for a few countries such as Japan. In recent years salmonellosis has become more frequent in Japan because of *S.enteritidis* infections arising from consumption of eggs[2]. There have also been large outbreaks in Japan due to *E. coli* O157. One, which, affected over 9,000 people and caused 11 deaths, was thought to be associated with radish sprouts. *E. coli* O157 is being reported from several countries in Latin America[3].

Co-ordinating Initiatives

3.21 The European Commission is funding electronic links in Europe to enhance surveillance systems for infectious diseases. One of these programmes, Salm-Net, was established in January 1994. Countries participating in the programme aim to collect internationally comparable laboratory data on human *Salmonella* infections so that cross-boundary outbreaks and significant international trends in *Salmonella* infection can be identified. In 1997 Salm-Net was expanded to form a new surveillance programme called Enter-Net which will further enhance surveillance for *Salmonella* and *E. coli* O157 in Europe.

3.22 The European Commission publishes a document each year on the trends and sources of zoonotic agents in animals, feedingstuffs, food and man in the European Union. This is produced from data supplied by Member States as required by 92/117/EEC concerning measures for protection against specified zoonoses and specified zoonotic agents in animals and products of animal origin.

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4. GOVERNMENT APPROACH TO MICROBIOLOGICAL FOOD SAFETY

4.1 The Government's approach is to seek to reduce the potential for contamination at all stages of the food chain. In practical terms, it should be recognised that more can be done at some stages than others, and the scope for improvement at some stages is limited. It remains the case that the application of the proper hygienic practices in food preparation both in the food industry and in the home is a major safeguard. All those involved in food preparation should be made aware of the proper procedures, and recognise their importance. In addition, the spectrum of pathogens presenting the threat is subject to change. Evolving lifestyles lead to different food consumption patterns and habits, and these may present new challenges to food safety. Finally, it must be recognised that the control exercised in the UK over the microbiological quality of imported food can seldom be as comprehensive as that for food produced in the UK.

4.2 There are therefore two main elements to government policy, namely:

— to promote good hygienic practices both in the home and throughout the food chain; and

— to reduce the prevalence of human pathogens in the food chain from farm to fork.

The legal framework

Food Safety Act

4.3 The Food Safety Act 1990 puts the onus on food businesses to ensure that the appropriate checks are carried out to ensure that the food they offer for sale is safe. The Food Safety Act and its regulations apply only to Great Britain. Northern Ireland has similar but separate food legislation. The Act covers a broad range of commercial activities relating to food; from the sources from which food is derived, such as crops and animals to articles which come into contact with food, ranging from wrappings to manufacturing plant.

4.4 In addition to the general powers in the Food Safety Act, there are specific hygiene requirements which flow in large part from European Community legislation.

General Food Hygiene Directive

4.5 Council Directive 93/43/EEC[1] on the hygiene of foodstuffs was adopted on 14 June 1993. This "horizontal" directive applies to food caterers and food retailers and to any food manufacturer or processor of products of non-animal origin (which are therefore not covered by product-scientific hygiene requirements—see below).

4.6 The hygiene requirements in the Directive were implemented in national law on 15 September 1995 by the Food Safety (General Food Hygiene) Regulations 1995[2]. The Directive and implementing Regulations introduced three new features into food hygiene controls:

— a requirement on all food business proprietors to identify steps in their activities critical to food safety and to ensure that adequate controls are in place, (five of the seven principles of HACCP see below);

— a requirement for all food handlers to be supervised and instructed and/or trained in food hygiene matters commensurate with their food activities; and

— the concept of voluntary Industry Guides to Good Hygiene Practice to provide practical guidance on the law for industry sectors.

4.7 This approach recognises the vast range of food business types, sizes and activities covered by the Directive, where prescriptive and proportionate requirements appropriate for all situations would be impossible to draft.

Product Specific ("Vertical") Hygiene Directives

4.8 The public is protected by a wide range of hygiene legislation on products of animal origin, mostly based on the Single Market measures of the European Community. Fourteen Directives are involved, covering products such as red meat, poultry meat, milk and milk products and live bivalve molluscs. The Directives in general do not apply at the retail and catering stage of the distribution chain. The Directives are implemented in national legislation in the UK through Regulations made, in the main, under the Food Safety Act 1990.

4.9 Vertical hygiene legislation currently involves a high degree of prescription as the means to effect public health protection. Typical provisions include detailed conditions concerning the design and use of premises and equipment, the control of production generally and of processes (such as canning, freezing), the control of packaging, storage and transport and staff hygiene. The Directives also contain provisions dealing with official checks by the competent authority and conditions applying to third country imports into the EC. Some of the Directives have introduced food safety controls based on hazard analysis (known as "own checks"), but in addition these Directives generally retain a high level of prescriptive controls (examples are the fishery products and mead products Directives).

Consolidation/Simplification of Hygiene Legislation

4.10 EC product-specific hygiene legislation is voluminous, complex, and in places inconsistent. The European Commission (DGVI) is undertaking a major public consultation on consolidation and simplification of it, with a view to improving coherence, transparency and user-friendliness. The Commission has made it clear that public health protection will remain paramount.

4.11 MAFF and the Department of Health had already reviewed the hygiene Directives, prompted by the difficulties experienced in implementing them in national legislation. The Commission's consultation document closely aligns with views elicited in the UK by public consultation on the MAFF/DH review. In particular, it is intended that the approach to food safety controls based on hazard analysis principles will be extended across the board, but prescriptive requirements will be retained where necessary to address risks specific to individual product types or sectors. The Commission plans to produce draft formal proposals in the light of the responses to their consultation ready for submission to the Council of Ministers next year.

HACCP

4.12 The control of the production of microbiologically safe food in the food industry has traditionally focused on both ends of the process, with an emphasis on the microbiological specifications of the raw ingredients going in and the microbiological testing of the final product coming out. The modern approach to the problem seeks to identify the potential hazards in an operation, and then develop working procedures to eliminate them. This has led to the introduction by the food industry of food safety control systems based on HACCP.

4.13 The Hazard Analysis Critical Control Points (HACCP) approach is a well defined and comprehensive food safety control system which identifies, evaluates and controls hazards which are significant for food safety. HACCP focuses on preventive controls rather than relying mainly on end-product testing. The Government fully supports the HACCP approach to improving food safety.

4.14 HACCP involves analysis of the entire process with each processing step assessed for its potential to cause a hazard. This analysis identifies so-called Critical Control Points (CCPs), where failure to effect adequate controls would create or pass on a hazard to the consumer. Appropriate controls are identified for each CCP. The controls are then strictly implemented and monitored. Where conditions at any CCP fall outside the safe limits set by the hazard analysis procedure then remedial action, again specified in advance, is taken. The whole process is carefully documented and requires verification. In summary, the seven steps involved are:

(i) identify the potential hazards in an operation;

(ii) determine critical control points;

(iii) establish critical limits to ensure that the critical control points are under control;

(iv) establish a system to monitor the critical control points;

(v) establish corrective action to be taken when a critical control point is not under control;

(vi) verify to confirm that the HACCP is working properly; and

(vii) document procedures and records.

The application of the first five out of the seven HACCP principles in food businesses is a requirement of the EC Food Hygiene Directive and the corresponding UK regulations.

4.15 The Codex Alimentarius Commission, the Richmond Committee, the Advisory Committee on the Microbiological Safety of Food (ACMSF) and the Pennington Group have all recommended HACCP as the best way to ensure satisfactory hygiene controls are in place in a food operation. Internationally, HACCP is seen as the system of first choice for food safety. Codex has recently adopted principles and guidelines for the application of HACCP. These have been appended to the "General Principles of Food Hygiene" which form the basis for all Codes of Hygiene Practice developed by Codex.

Enforcement

4.16 Day-to-day enforcement of food hygiene legislation is the responsibility of food authorities. (In Northern Ireland responsibility for enforcement rests with District Councils and the Department of Agriculture.) The State Veterinary Service, the Dairy Hygiene Inspectorate, and the Meat Hygiene Service are involved as appropriate in enforcement on farms and at slaughterhouses.

4.17 Amongst other things, the Act provides powers for enforcement officers (subject to certain conditions) to enter food premises (Section 32), inspect food and detain or seize suspect food (Section 9), take samples of food for analysis (Section 29) and to ask a Justice of the Peace to condemn it (Section 9). Further powers allow enforcement officers to issue improvement notices where food hygiene or processing requirements are not being met (Section 10), prohibition orders where there is a risk of injury to health (Section 11) and emergency prohibition notices where there is an imminent risk to health (Section 12). There are also powers to take action under the Imported Food Regulations.

Codes of Practice

4.18 Section 40 of the Act enables Ministers to issue Codes of Practice to food authorities on the execution and enforcement of the Act and regulations and orders made under it. Ministers must consult interested parties before issuing such codes and food authorities must have regard to the advice on best practice given in the Codes.

4.19 There are currently 20 Codes of Practice giving advice on a wide range of issues including the registration of food premises, the inspection frequencies and procedures, enforcement of general ("horizontal") food hygiene regulations, enforcement of product specific ("vertical") food hygiene regulations, the inspection, detention and seizure of suspect food, and the use of improvement notices and prohibition procedures. Food authorities must also have regard to other guidance sent out by Government and LACOTS on food law, enforcement and food safety issues. DH operate a Food Hazard Warning System to alert food authorities to food safety problems and give advice and request action.

The Role of Expert Advisory Committees

4.20 In order to assist it in policy development, the Government seeks the advice of independent expert committees. In 1989 the previous Government established the Richmond Committee to advise on matters related to the microbiological safety of food. One of its recommendations was to establish a committee which could provide advice in this area on a continuous basis. Consequently, the Advisory Committee on the Microbiological Safety of Food (ACMSF) was established in 1990 to provide independent expert advice to all UK Health and Agriculture Ministers on matters related to the microbiological safety of food, and to inform their policy and decision making processes. The ACMSF is currently chaired by Professor Douglas Georgala, an independent scientific consultant and past Director of the Institute of Food Research. There are 15 members, drawn from the microbiological, medical and veterinary professions, consumer affairs, food manufacturing, retailing and catering, and public and environmental health.

4.21 In addition to producing Annuals Reports[3-7] on its activities, the Committee has reported to Government on the following specific microbiological food safety topics:

- vacuum packaging and associated processes (1993)[8];
- *Salmonella* in eggs (1993)[9];
- *Campylobacter* (1993)[10];
- verocytotoxin-producing *Escherichia coli*—VTEC (1995)[11]; and
- poultry meat (1996)[12].

4.22 Two Working Groups of the Committee are currently investigating "Foodborne Viral Infections" and "Microbial Antibiotic Resistance in relation to food safety". The Government looks forward to receiving the Committee's advice on these two important topics during the course of 1998. The Committee has submitted its own memorandum to the Select Committee for the current enquiry.

The Pennington Group Report[13]

4.23 The Pennington Group was established by the Scottish Office following the *E. Coli* O157 outbreak in Central Scotland at the end of 1996. The Group made 32 recommendations, all of which have been accepted by the Government, and their implementation is now under way.

The Role of Surveillance

4.24 In addition to the advice it gets from the ACMSF, the Government also receives information on the microbiological status of the food chain from two other groups—the Microbiological Food Surveillance Group (MFSG) and the Epidemiology of Foodborne Infections Group (EFIG). Both groups were set up by the previous Government in succession to the Steering Group on the Microbiological Safety of Food (SGMSF). The SGMSF, along with the ACMSF, formed the twin arms of a national system of food surveillance and assessment recommended by the Richmond Committee.[14] In 1995, the previous Government decided to merge the functions of the ACMSF and SGMSF with the aim of ensuring the more efficient and streamlined consideration of food safety issues.[15] In addition, Government participates in the EU Co-ordinated Control programme, which has included microbiological surveillance.

The Microbiological Food Surveillance Group

4.25 The purpose of the Microbiological Food Surveillance Group is to co-ordinate the Government's microbiological food surveillance programme. The Group's objective is to co-ordinate surveillance activities and identify through surveillance the need for action to ensure the microbiological safety of food. In addition to representatives from MAFF, DH and the territorial Agriculture Departments, there are eight external members drawn from catering, food production, retailing and research, food and trading standards, public health and consumer affairs. The purpose of this surveillance is to establish the microbiological status of food processes and groups of foods. Recent examples include studies on cooked meats, *Salmonella* in eggs, and canneries.

The Epidemiology of Foodborne Infections Group

4.26 The objective of the Epidemiology of Foodborne Infections Group is to co-ordinate surveillance of animal and human infection and to identify, through that surveillance, the need for action to ensure the microbiological safety of food. In addition to representatives from DH, MAFF and the territorial Departments, there are eight external members drawn from medicine, microbiology, epidemiology and the veterinary profession. Recent surveys include the epidemiology of *E. coli* O157 in the food chain, and the IID study.

Role of Research

4.27 The Government regards funding of research and development (R&D) on the microbiological safety of food as an important element in the measures being taken to ensure the safety of the nation's food supply and the protection of consumers. Research is used to identify and investigate problems, to develop policy options, and to implement solutions and assess their effectiveness in respect of current issues.

4.28 MAFF and DH are the major funding Departments, with some work being funded by the Territorial Departments. Almost all of the work is commissioned via open competition. The main thrust of the R&D programme is the underpinning of a preventative and pro-active approach to the microbiological safety of food. The safety of consumers is paramount and initiatives are in place to ensure that outputs are made available to those—including the food industry itself and enforcement agencies—who can best make use of them for the public good.

4.29 Given the scope of R&D on the microbiological safety of food, effective communication within and between funding Departments is essential in order to avoid duplication and make the best use of available resources. This also helps ensure that the R&D addresses the whole of the food chain, providing a balanced coverage from 'Farm to Fork'. Co-ordination of microbiological R&D is carried out through an Inter-Departmental Group on Microbiology (IDGM) which is attended by MAFF, DH and territorial departments. Steps are currently underway to expand the Group to include all significant funders of food microbiology R&D in the UK.

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5. REDUCING THE POTENTIAL FOR MICROBIOLOGICAL CONTAMINATION IN THE FOOD CHAIN

5.1 This Chapter presents in summary the measures and policy approaches which seek to reduce the potential for microbiological contamination in the food chain. It reflects the overall thrust of policy, which is to reduce contamination, where there is scope to do so, at each of the food production stages, from the farm to food production processes, and to the steps which the consumer can take.

Salmonella in animals

5.2 Salmonella infection in poultry and livestock is not uncommon, but although certain serotypes can cause severe disease, most infected animals are perfectly healthy.

Salmonella in poultry

5.3 *Salmonella* in poultry is considered separately from *Salmonella* in other groups of animals, because *Salmonella enteritidis,* the *Salmonella* species that causes most disease in man, is particularly associated with birds. *Salmonella enteritidis* has the ability to infect eggs and can therefore be transmitted vertically from parent to chick.

5.4 The poultry industry is structured in two quite separate pyramids, one producing birds for consumption as meat (broilers), and the other producing eggs mainly for retail sale. Each pyramid is made up of two parts. At the top is the breeding sector, with broiler breeder flocks in the broiler pyramid and layer breeder flocks in the retail egg pyramid producing other breeding birds or birds for the production sector. At the bottom, the much larger production sector comprises broiler flocks in the "broiler meat" pyramid and commercial laying flocks in the "retail egg" pyramid.

5.5 *Salmonella* infection has greater potential to become widespread if it occurs in the breeding pyramid than if it occurs in a commercial production flock. If a flock of egg-laying hens becomes infected, the number of infected individuals may remain quite small. However, if grandparent or parent stock become infected, the potential exists to spread the infection via the progeny to many different farms.

5.6 The control of *Salmonella enteritidis* and *Salmonella typhimurium* in breeding flocks of domestic fowl throughout Member States is governed by Council Directive 92/117. The Directive also requires Member States to collect epidemiological information on certain zoonoses, including *Salmonella enteritidis* and *Salmonella typhimurium* and to submit an annual report to the Commission on the trends in and sources of these infections.

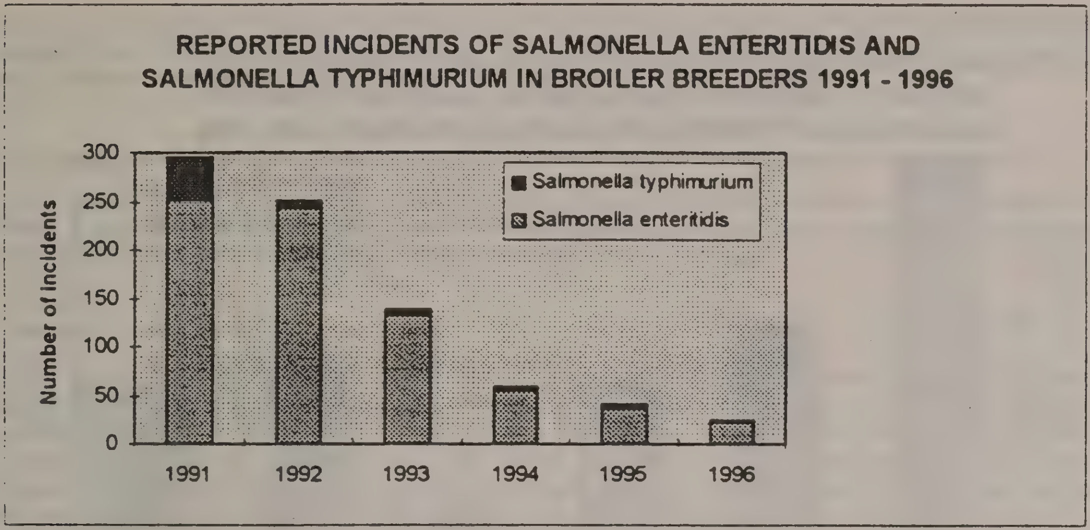
5.7 The aim of the legislation is to detect and control infection in the breeding flocks, so that the commercial production flocks are supplied with uninfected birds. Breeding flocks are required to submit samples at regular intervals for testing for *Salmonella* at an approved laboratory. These samples are normally taken at the hatchery. In some cases (usually smaller flocks) samples may be taken from the breeding flock itself rather than from the hatchery.

5.8 When, as a result of this monitoring, *Salmonella* is confirmed in a breeding flock, the legislation provides for the birds to be slaughtered with compensation.

5.9 This policy of legisltive control of infection in breeding flocks is supplemented by a series of voluntary codes of practice drawn up in consultation with industry (see for example paragraphs 12.15 to 12.17). They provide guidelines for establishing good hygiene/production practices and microbiological monitoring regimes for the prevention and control of *Salmonella* from farm through to the supply of feedingstuffs.

Salmonella in broilers

5.10 The number of reported incidents of *Salmonella enteritidis* and *Salmonella typhimurium* in broiler breeder flocks has been declining since 1991. This appears to be a true reflection of the situation in the field. There has, for instance, been no reduction in the number of broiler breeder flocks to account for the fall in the number of incidents.



5.11 The surveillance of *Salmonella* in UK-produced chickens on retail sale has been monitored from time to time, and the results are given below.

Table 1

PREVALENCE OF SALMONELLA SPP. AND SALMONELLA ENTERITIDIS PT4 IN RAW, UK-PRODUCED WHOLE CHICKEN ON RETAIL SALE

Survey	*Type*	*No. of chickens sampled*	*Per cent with Salmonella spp*	*Per cent with S. enteritidis PT4*
1979–1980	frozen	100	79	0
1987	frozen	101	64	20
1990	frozen	143	54	23
1994	frozen	281	41	20
1987	chilled	103	54	10
1990	chilled	143	41	20
1994	chilled	281	33	12

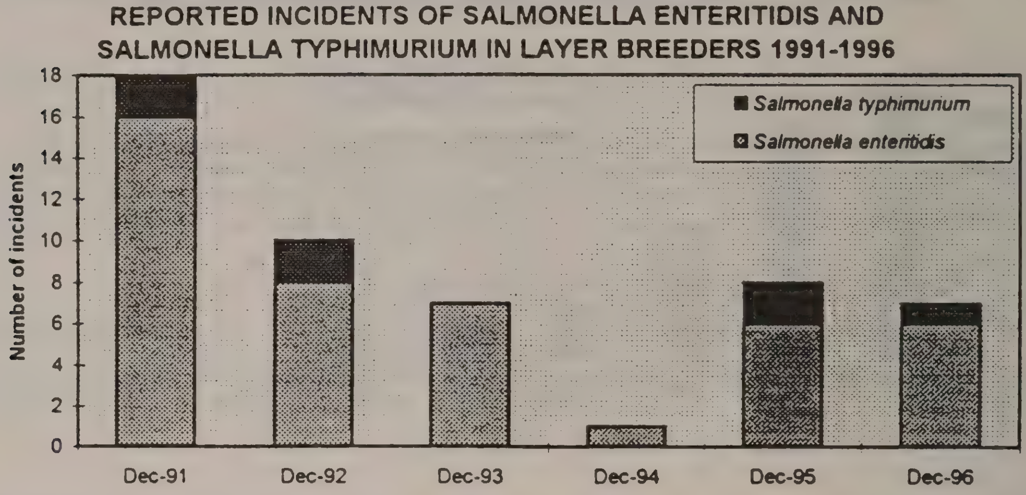
In addition, similar surveys carried out in 1994 in Scotland and Northern Ireland indicated a level of *Salmonella* contamination in chickens of 20 per cent and 7 per cent respectively. It is clear therefore that the proportion of chickens with *Salmonella* has been falling steadily over the years. Further studies of this nature are planned.

5.12 The ACMSF, in its report on poultry meat (1996), said that there is no reason in principle why the prevalence of *Salmonella* contamination in the finished, raw product should not, within the next few years, be reduced to a single figure percentage on the basis of existing available technology. The report places great emphasis on the implementation of HACCP in the industry, and in addition made many separate recommendations, the majority of which were addressed to the industry.

5.13 In addition, in 1997 MAFF initiated a special emphasis programme on the reduction of contamination of *Salmonella* and *Campylobacter* in poultry. The intention is to build on the recommendations of the ACMSF report by initiating an in-depth study of the poultry meat chain which will make use of all the available sources of information (R&D, surveillance, industry practice, scientific and trade literature, etc.) to establish the points in the chain where intervention strategies are likely to provide the greatest potential to reduce or eliminate *Salmonella* and *Campylobacter*. For each point there will be a need to identify, and if necessary develop, practical techniques that can be used to control the presence of these organisms in poultry. Currently there are two projects in the programme, costing about £450,000 over three years.

Salmonella in eggs

5.14 The results of monitoring in layer breeder flocks in recent years is shown below.



REPORTED INCIDENTS OF SALMONELLA ENTERITIDIS AND SALMONELLA TYPHIMURIUM IN LAYER BREEDERS 1991-1996

The main part of the layer breeder sector would appear to be clear of *Salmonella* infection. The level of infection in the layer production sector is not known. However, the results of surveys of *Salmonella* in UK-produced eggs on retail sale in 1991 indicated an approximate level of contamination of 1 in 600 eggs with *Salmonella* either in the egg or on the shell. The results of a similar survey carried out in 1995–96 revealed no significant change. The ACMSF report on *Salmonella* in Eggs was published in 1993. The Committee will be examining the results of the surveys and considering what further measures are justified.

Salmonella in cattle, sheep and pigs

5.15 There have been no surveys of the prevalence of *Salmonella* in healthy animals. The available data on trends of *Salmonella* in cattle, sheep and pigs is mainly the result of investigation of clinical disease in these species. The results between 1990 and 1996 are shown in Table 2.

Table 2

SALMONELLA REPORTS FROM CATTLE, SHEEP AND PIGS 1990–96

Serotype	*1990*	*1991*	*1992*	*1993*	*1994*	*1995*	*1996*
S. enteritidis	52	22	25	26	33	24	19
S. typhimurium	789	553	559	896	1,188	1,422	1,210
Other serotypes	1,102	969	820	1,097	1,225	1,175	982
Totals (all serotypes)	*1,943*	*1,544*	*1,404*	*2,019*	*2,446*	*2,621*	*2,211*

5.16 Following significant increases from 1992 to 1995 in reported incidents reported of *Salmonella typhimurium*, it is encouraging to note the 10 per cent fall in incidents during 1996. This decrease has continued during 1997 to date. The fall is also reflected in the number of incidents of *Salmonella typhimurium* affecting cattle and in particular of the specific strain *Salmonella typhimurium* DT104.

5.17 The control of these organisms in meat depends on the application of sound hygienic practices in the slaughterhouse and beyond. The measures taken to reduce such contamination (see paragraphs 5.57 onwards) should be effective against *Salmonella.*

Salmonella in animal feedingstuffs

5.18 One potential source of microbiological contamination of farm animals is via animal feedingstuffs. In 1992, in response to a recommendation made by an expert committee studying animal feedingstuffs, MAFF asked laboratories to provide enhanced information on the results of monitoring for *Salmonella* in animal feedingstuffs. The result is that a large number of tests are conducted on animal feedingstuffs. The overall level of contamination with *Salmonella* has been found to be low (generally under 5 per cent). A small increase has been observed in pig and poultry meal, but the types of *Salmonella* isolated are not generally those which are a major cause of human disease. Both *Salmonella enteritidis* and *Salmonella typhimurium* are rarely isolated from animal feedingstuffs.

Campylobacter in animals

5.19 *Campylobacter jejuni* and *Campylobacter coli*, the major human pathogens, can be associated with disease in young cattle, pigs, dogs and cats but are not considered to be of particular significance in animal health terms. As with *Salmonella*, most infected animals are perfectly healthy.

Campylobacter in poultry

5.20 Broiler flocks are initially free of infection, but when infection does enter a flock it spreads very rapidly. By the time flocks are six to eight weeks of age and ready for slaughter most would be expected to be infected. The ACMSF, in its Report on Poultry Meat, recognised that there was the need for further research to establish the prevalence of *Campylobacter* in poultry flocks, and to investigate the origins of infection, transmission routes and potential mechanisms by which infection might be controlled. For these reasons, the Committee did not feel able to identify a target for *Campylobacter* contamination achievable in the next few years. MAFF's special emphasis programme (see paragraph 5.13) should identify the measures which can be taken in the current state of knowledge.

Campylobacter in livestock

5.21 It may not be feasible to rear other species free of *Campylobacter*, because of the increased time interval before slaughter and the more complicated husbandry factors involved. The ubiquitous nature of the organism in wild animals, birds and the environment, especially watercourses, means that control of infection in extensively produced livestock is currently not a possibility. No vaccines are currently available.

5.22 The control of *Campylobacter* in meat depends on the application of sound hygienic practices in the slaughterhouse and beyond. The measures taken to reduce such contamination (see paragraph 5.57 onwards) should be effective against *Campylobacter*.

Verocytotoxin-producing Escherichia coli O157 in animals

5.23 Verocytotoxin-producing *E coli* O157 (VTEC O157) is not considered to be associated with disease in domestic animals, but has been shown to be carried by livestock, in particular ruminants. A wide variety of species have been found to be infected including cattle, sheep, goats, horses, and pigs.

5.24 Little is known about the proportion of herds or flocks which are infected, the prevalence of infection within herds or flocks, or the circumstances which predispose to spread of infection between and within herds or flocks. Currently, therefore, there is little scope for controlling the spread of infection or of eradicating infection. Furthermore, there is little information on the correlation between the presence of the organism in the gut and the shedding of the organism in the faeces. Steps being taken to minimise the contamination of carcases are outlined in paragraph 5.57 onwards.

5.25 A Government funded survey to establish the level of infection of bovine carcases in slaughter houses found that the organism was isolated from 19 out of 4067 carcase samples. A survey to establish the level of VTEC O157 in faecal samples from cattle and sheep presented for slaughter at abattoirs, is planned to begin shortly.

Antibiotic resistance—use of veterinary medicines.

5.26 The use of antibiotics in veterinary medicine plays an important part in combating disease in animals but there has been concern for some time that their use may be contributing to the development of antibiotic resistant micro-organisms in the food chain. Health and Agriculture Ministers ("the Licensing Authority") currently receive advice on the authorisation of antibiotics for use by veterinarians from the independent Veterinary Products Committee (VPC). The VPC examined the issue of antibiotic resistance in 1995 and confirmed that advice should continue to follow the principles established in the Report of the Joint Committee on the Use of Antibiotics in Animal Husbandry and Veterinary Medicine (the Swann Report[1]) published in 1969. The VPC concluded that new antimicrobials should not necessarily be precluded from therapeutic use in animals but their prophylactic use should be discouraged and the VPC would consider each case on its merits and seek appropriate advice. Antimicrobials are also used as zootechnical feed additives, as growth promoters or as anti-coccidiostats. In 1992 the report of the Expert Group on Animal Feedingstuffs (the Lamming Report[2]) recommended that antibiotics showing cross resistance to those used in human medicine should not be used as growth promoters.

5.27 In 1995 the Advisory Committee on the Microbiological Safety of Food (ACMSF) examined the issue of antibiotic resistance against a background of concern about a rising incidence of certain antibiotic resistant enteric pathogens in humans and animals (eg multiple drug resistant *Salmonella typhimurium* DT104 and ciprofloxacin-resistant *Campylobacter*). The ACMSF focused on whether the Committee needed to examine the situation further, particularly in relation to the use of antimicrobial drugs in humans and animals, and trends in antibiotic resistance in micro-organisms associated with gastrointestinal infections in humans.

5.28 Following an exploratory consultation with other bodies (eg PHLS, Medicines Control Agency, Veterinary Products Committee, Advisory Committee on Novel Foods and Processes) a Working Group on Microbial Antibiotic Resistance in Relation to Food Safety was established in 1996 with the Terms of Reference "To assess the risks to humans from antibiotic resistant micro-organisms entering the food chain and to consider the need for any action to protect public health". The Group agreed that the following broad areas of work should be undertaken:

- assessing the likely scale of the problem of human and animal infections caused by antibiotic resistant micro-organisms in the food chain;
- assessing the role and importance of food and food production as a source of antibiotic resistant micro-organisms for humans; and
- considering the need for any action to protect human health.

5.29 The Working Group began its programme of work at the end of August 1996 and is considering a substantial amount of written information from a variety of bodies including the pharmaceutical industry, feed producers, medical and veterinary professions and other interested organisations, including consumer and environmental groups, both in the UK, and abroad. The Group is currently taking oral evidence from some of the organisations which responded.

5.30 To date the Working Group has primarily focused on farm use of antibiotics as therapeutics and growth promoters, although aquaculture has also been considered. The Working Group hopes to begin drafting its report towards the end of the year. This will be submitted to Ministers following endorsement by ACMSF. The Government recognises the need for this area to be fully addressed and will consider carefully the ACMSF's report and its recommendations.

Use of sewage sludge on land

5.31 An inevitable by-product of sewage treatment is sewage sludge. At present some 1.1 million tonnes is produced annually and this is expected to rise to 1.5 million tonnes by 2005 with the phased implementation of the Urban Waste Water Treatment Directive. The Directive requires a complete end to the disposal of sewage sludge at sea by the end of 1998, with a progressive reduction in the interim of the total amount of toxic, persistent or bioaccumulable materials contained in sludge. It also requires that sludge arising from waste water treatment should be re-used whenever appropriate and that disposal routes should minimise the adverse affects on the environment.

5.32 The current main methods of dealing with sewage sludge and the changes predicted for 2005 are shown in the diagram in the Annex to this chapter. The predictions will be refined in a survey to be undertaken in 1998. In "Making Waste Work. A Strategy for Sustainable Waste Management in England and Wales", the last Government took the view that the recovery of value from sewage sludge through controlled spreading on land was the best practicable environmental option for most sludge. The Annex shows that about half of the annual production is currently used in this way rising to two thirds (of a larger total quantity) by 2005. The area of agricultural land to be treated with sewage sludge each year would rise from less then 0.5 per cent to around 1 per cent over this period.

5.33 The potential problems of the application of sewage sludge to agricultural land have been recognised for many years and controls are in place to safeguard human, animal and plant health and to maintain soil fertility and crop yields. Current controls are the Sludge (Use in Agriculture) Regulations 1989 (as amended) which implement EC Directive 86/278 "On the protection of the environment, and in particular of the soil, when sewage sludge is used in agriculture". These Regulations are complemented by a voluntary *Code of Practice for Agricultural Use of Sewage Sludge*. A description of the main features of the controls is contained in the Annex to this Chapter.

5.34 Both the Regulations and the Code of Practice are subject to review in the light of ongoing research, experience and emerging scientific opinion. Some metal concentration limits in the Code were amended in 1996 to incorporate precautionary recommendations by an independent committee which considered the soil fertility aspects of the controls. A wide ranging review is now under way following recommendations by the Royal Commission on Environmental Pollution (RCEP) in its 19th report *Sustainable Use of Soil*. While noting that "there have been no instances in the UK in which a link has been established between the controlled application of sewage sludge to agricultural land and disease in the general population through food or water contamination", the RCEP went on to say that untreated sewage sludge will contain a variety of pathogens and its use on agricultural land is therefore a theoretical pathway by which infection could return to the general population. It also commented that although the Code of Practice provided a considerable measure of protection for the use of untreated sludge, it had not been demonstrated satisfactorily that it eliminated the risk. The RCEP recommended that Government review the scientific basis for the specific periods between the use of sludge and the planting or harvesting of crops and/or livestock as well as recommending that all sewage sludge applied to agricultural land be treated by at least one of the methods listed in the Code of Practice. They further recommended that disposal of sewage sludge on dedicated land or within the curtilage of sewage treatment works be discontinued as soon as possible.

5.35 In response to these recommendations and to meet the need for a more transparent explanation of the current controls, the last Government—in association with the water industry—commissioned a comprehensive review of the scientific evidence underpinning the 1989 rules taking into account any new evidence. It will focus on the potential for disease transmission, but will also cover those aspects of the Code of Practice which are designed to protect human, animal and plant health and soil fertility from adverse effects of potentially toxic elements and organic chemicals. The study will also cover current practices for the use of treated and untreated sludge as well as the "withdrawal" periods and make recommendations either for changes in practice or where further research is called for. The review is being undertaken by the Water Research Centre (now WRC plc) and the study will also cover practice and research needs relating to the potential pathogen risk of a number of other organic wastes and manures applied to land. The study, which is expected to be completed by the end of 1997, will be subject to independent peer review by appropriate expert advisory committees (or bodies of equivalent status) and published.

Use of farm slurry

5.36 Approximately 200 million tonnes of livestock excreta are produced on farms in the United Kingdom every year of which around 120 million tonnes are deposited on land by animals while grazing. The remaining 80 million tonnes is collected in buildings and yards as manure (with straw bedding or litter added) or slurry (with dilution water added) and subsequently applied as a fertiliser to agricultural land. A small amount (mostly broiler litter) is used as fuel in power stations.

Risk to water supplies

5.37 For England and Wales, the MAFF/WOAD Code of Good Agricultural Practice for the Protection of Water (The Water Code) was published in July 1991 to provide practical guidance to help farmers avoid causing water pollution. Similar Codes of Practice have also been produced by the relevant authorities in Scotland and Northern Ireland. The Water Code acknowledges that polluting materials, such as animal slurry, contain micro-organisms which could harm humans and livestock and that any surface or groundwater polluted with such waste could be contaminated by these organisms. The Water Code provides advice on spreading manures and slurry to land to minimise the risk of causing water pollution, an activity referred to as "farm waste management planning". The most economic and environmentally friendly way of disposing of animal manure, slurry and dirty water is normally to apply it to agricultural land.

5.38 The revised draft of The Water Code which was issued for a public consultation in July 1997 expands the earlier advice by making a more direct connection between farm waste management planning and reducing the risk from micro-organisms. The text is as follows:

> "Polluting materials, such as animal slurry, contain micro-organisms, such as *Salmonellae*, toxin producing *Escherichia coli* and *Campylobacters*, which could harm humans and livestock. Any surface or groundwater polluted with such waste could be contaminated with these organisms. A particular problem is contamination with the parasite, *Cryptosporidium parva*, which can make humans ill and is difficult to detect and remove when water is being treated.
>
> Following a Farm Waste Management Plan (see Section 3) when applying slurries, manures and dirty water to land will do much to reduce the risk of transfer of pathogens from animal wastes to water".

5.39 The revised version of The Water Code sets out some further precautions for farms where *Cryptosporidium parva* has been diagnosed. The text is as follows:

> "On farms where *Cryptosporidium parva* has been disagnosed, extra precautions should be taken to reduce the risk of contaminating watercourses with viable *Cryptosporidium* oocysts. Slurries should be stored for as long as practicable before speading. The application of dirty water to land presents a high risk of spreading the organism. You should apply dirty water carefully, and only to fields with the least risk of causing water pollution from run-off. Farmyard manure should be stored for at least 2 months before spreading".

5.40 The Control of Pollution (Silage, Slurry and Agricultural Fuel Oil) Regulations 1991 (as amended) set a minimum standard for the construction of new or substantially modified storage facilities. Stores built before 1 September 1991 are usually exempt from the rules but the Environment Agency can require farmers to make improvements if there is a significant risk of causing pollution. A considerable amount of manure and slurry collected in and around buildings is stored before it is spread. Storing manure and slurry reduces the risks of pathogen transfer.

5.41 There are no legislative controls over the spreading of manures but if farmers cause pollution they can be prosecuted by the Environment Agency under the provisions of the Water Resources Act 1991.

Risk to the food chain

5.42 The comprehensive review on the potential for disease transmission from the use of sewage sludge described in paragraph 5.34 will also cover practices and research needs relating to the potential pathogen risk from organic wastes and manures spread on agricultural land.

Waste water discharges to sea and rivers

5.43 The main public health risks potentially arising from the discharge of sewage effluent fall into two broad categories—those associated with the consumption of bivalve molluscs (shellfish), and those associated with water recreation/contact. Given the level of treatment applied both to waste water before discharge and to water abstracted for drinking water in the UK, the public health risks posed by drinking water derived from riverine sources which have received sewage effluent are very low. Whilst sewage effluent may be a source of *Cryptosporidium* contamination the most significant source of this is thought to be grazing animals.

Risks from Shellfish

5.44 Public health hazards associated with the consumption of bivalve molluscs (eg oysters and clams) predominantly reflect the fact that they are filter feeders and concentrate and retain any contaminants which may be present in their habitat, including human pathogens. Contamination of growing and harvesting areas by sewage may therefore have a major influence on the microbiological quality of the shellfish. The link between shellfish-transmitted disease and sewage pollution became well documented in the late 19th century, and the United Nations in their 1990 report on the marine environment stated that "the present state of knowledge indicates that the most clearly identified health risk associated with coastal pollution by urban waste water is the transmission of disease by the consumption of shellfish harvested in contaminated areas".

5.45 Outbreaks of food borne disease associated with the consumption of bivalve molluscs are primarily caused by Small Round Structured Viruses, which cause gastroenteritis. There is also a relatively small number of cases of illness caused by hepatitis A virus. There is little incidence of illness attributable to food poisoning bacteria such as *Salmonella*. Outbreak data suggests that the principal risk in the UK is associated with oysters, which are usually consumed raw or lightly cooked. Also, they are consumed whole, including the viscera, which contain most of the contaminants.

5.46 In order to protect consumers of shellfish, the UK has statutory controls for molluscan shellfish under the Food Safety (Live Bivalve Molluscs and Other Shellfish) Regulations 1992 which implement the EC Shellfish Hygiene Directive (91/492/EEC). This Directive lays down product standards which all shellfish sold to the consumer must meet, either directly from the harvesting area, or following commercial processing. Shellfish harvesting areas are classified according to levels of faecal pollution in the shellfish and this classification dictates the further processing, if any, that may be required before the shellfish can be sold. The classification process divides shellfish harvesting areas into three categories based on the level of *E. coli* or faecal coliform contamination.

5.47 In England and Wales, MAFF issues annual classifications of shellfish harvesting areas, based on bacterial monitoring undertaken monthly by local authorities. This enables baselines of contamination to be established and significant deterioration or improvement to be detected. However the classification may not reflect the impact of untreated intermittent discharges from combined sewer overflows or storm water overflows in the vicinity of shellfish harvesting areas. The 1997 listing covers more than 161 shellfish beds of which about 9 per cent fall within category A (allowing harvesting for direct consumption), 60 per cent into category B (consumption allowed after depuration—ie shellfish have spent at least 42 hours in tanks of clean sea water or after heat processing or relaying) and 26 per cent into category C (relaying of at least 2 months required). Harvesting is prohibited in 5 per cent of areas. In Scotland there are similar arrangements for classifying and monitoring shellfish harvesting areas. The 1997 listing covers 177 harvesting areas, with 56 per cent category A, 19 per cent A/B seasonal, 21 per cent category B, and 4 per cent category C. An A/B seasonal classification indicates a harvesting area in which the A category criteria are met for certain specified months of the year, whilst for the other months the category B criteria apply.

5.48 It has been shown that viruses are more resistant to depuration and relaying than bacterial contaminants and may be present in sufficient numbers to cause disease, even after bacterial contaminants are removed. The current standards for Shellfish are based on bacterial indicators which were set reflecting scientific uncertainties over the practicalities of testing for other microorganisms such as viruses.

5.49 There is evidence that secondary sewage treatment is about 10 times more effective in reducing the numbers of bacteria than it is in reducing the numbers of enteroviruses. Both this differential in removal/inactivation and the fact that microbial removal by secondary and tertiary treatment processes can vary markedly with operating conditions have implications for the efficacy of current shellfish hygiene control measures. Tertiary treatment can be effective in the removal of viruses, and such treatment would therefore be of benefit for discharges in the vicinity of shellfisheries.

5.50 In recent years, Government funded work has been directed towards the development of indicators of faecal contamination which reflect the behaviour of viruses better than current bacterial indicators and the development of methods for detecting viral pathogens in shellfish. The work is producing promising results and may lead in due course to better means of detection and removal or inactivation of viruses.

5.51 The Advisory Committee on the Microbiological Safety of Food has a Working Group conducting a study into the whole epidemiology of foodborne viral infections including the extent of the public health problem associated with bivalve molluscan shellfish and the adequacy of prevention and control measures. The Government looks forward to receiving the Committee's report and recommendations later this year or early in 1998.

Algal toxins in shellfish

5.52 Illness can also be caused by consumption of filter-feeding bivalve molluscan shellfish (mussels, oysters and scallops) which have accumulated toxins produced by marine algae under particular environmental conditions. The toxins can cause three main types of illness following consumption of affected molluscs—paralytic shellfish poisoning (PSP), diarrhetic shellfish poisoning (DSP) and amnesic shellfish poisoning (ASP).

PSP and DSP

5.53 PSP is caused by a neurotoxin. Illness can be severe and sometimes fatal, although there have been no deaths in the UK since 1909. DSP causes a gastrointestinal illness and no fatalities have been recorded. The first recorded detection of DSP in UK shellfish occured in 1991 and the first recorded case of illness from UK produced shellfish occured in 1997. Cases of illness resulting from PSP and DSP are rare in the UK.

5.54 All outbreaks of PSP in the UK have been caused by mussels with the last outbreak occuring in 1968 when 78 people became ill after eating locally gathered mussels on the North East coast of England. A monitoring programme, which concentrated on the North East coast where there is no commercial production was established following this outbreak. This became a European Community requirement following Directive 91/492/EC, which lays down the health conditions for the production and placing on the market of live bivalve molluscs.

5.55 Member States are required to establish a system which includes periodic monitoring of live bivalve mollusc production areas for the possible presence of toxin producing plankton in water and biotoxins in shellfish flesh. This has been implemented in Great Britain by the Food Safety (Live Bivalve Molluscs and Other Shellfish) Regulations 1992. The monitoring programme was extended in 1995 to include more commercial production areas. When the legal limits are exceeded, action is taken to prevent shellfish being placed on the market when DSP is detected in samples of shellfish or when PSP is found to exceed the maximum permitted level.

Amnesic Shellfish Poison (ASP)

5.56 There is a further toxin which can produce Amnesic Shellfish Poison (ASP). ASP producing algae have been detected in water samples around the coast of the UK and in one sample of shellfish in Scotland. A proposal which will amend the Directive and establish a maximum permitted level is likely to be adopted in the near future.

Hygiene standards in slaughterhouses

5.57 This is an area harmonised by the European Community. Separate Directives govern the hygienic production of red meat, white meat and game. Implementing legislation covers Great Britain, with similar but separate regulations for Northern Ireland. EC Inspectors carry out regular visits to all Member States to check on compliance with Community law.

The Fresh Meat (Hygiene and Inspection) Regulations 1995 (as amended)—implement Council Directive 64/433/EEC (as amended by Directive 95/23/EC) and lay down the requirements for the production of fresh meat from bovine animals, swine, sheep, goats and solipeds. The Regulations also implement the Farmed Game Directive (91/495/EEC) in respect of large farmed game such as deer and wild boar. Any slaughterhouse producing meat intended for sale for human consumption must be licensed under the Regulations. The Regulations provide for less onerous structural (but not hygiene) requirements which apply to "low throughput" premises slaughtering no more than 1000 livestock units per year at a rate not exceeding 20 units per week. Premises involved in the cutting or re-packaging of meat for sale to the final consumer, or cold stores handling only packaged meat, are exempt from the Regulations. Such premises are nevertheless subject to general public health safeguards under the Food Safety Act, which are enforced by local authorities, and must comply with the requirements laid down in the Food Safety (General Food Hygiene) Regulations 1995.

The Poultry Meat, Farmed Game Bird Meat and Rabbit Meat (Hygiene and Inspection) Regulations 1995—implement Council Directives 92/116/EEC and 91/495/EEC and lay down the requirements for the production of poultry, farmed game bird meat and rabbit meat. The Regulations exempt premises killing less than 10,000 birds a year, premises involved in the cutting of meat for sale to the final consumer, or cold stores handling only packaged meat. However, these premises must comply with the requirements of the Food Safety (General Food Hygiene) Regulations 1995. They also provide for less onerous structural requirements which apply to "low throughput" premises slaughtering not more than 150,000 birds or 300,000 rabbits each year and to cutting premises which produce no more than three tonnes of cut up fresh meat each week. The full hygiene rules continue to apply.

The Wild Game Meat (Hygiene and Inspection) Regulations 1995. The Regulations apply to the production of wild game meat which is intended for consignment, or for sale for consignment, to a relevant EEA State. Therefore only premises involved in this trade, or those who wish their meat to carry a health mark for commercial reasons are required to be licensed under the Regulations.

Licensing system

For fresh and poultry meat slaughterhouses

5.58 As at 1 September 1997 the numbers of licensed low and full throughput slaughterhouses in the United Kingdom were as follows.

RED MEAT SLAUGHTERHOUSES

	England	*Wales*	*Scotland*	*N. Ireland*	*Total*
Full throughput	203	14	40	13	271
Low-throughput	178	21	9	0	208
Total	381	35	49	13	479

Of these, 7 premises are operating under a temporary derogation from certain structural standards.

POULTRY MEAT SLAUGHTERHOUSES

	England	*Wales*	*Scotland*	*N. Ireland*	*Total*
Full throughput	86	4	6	11	107
Low-throughput	48	9	3	4	64
Total	134	13	9	15	171

Full details of numbers of licensed premises by type are published.

5.59 Ministers may grant a licence to a premises if they are satisfied that the statutory, structural and hygiene requirements are met—if not, the licence application is refused. Ministers can also revoke a licence if hygiene requirements are not being complied with and the operator fails to take any action to rectify this, or if the conditons of the licence are no longer satisfied. Appeals against a licence refusal or revocation can be made to an independent Meat Hygiene Appeals Tribunal. If a premises was operating immediately prior to receipt of notification of revocation it can continue to operate (subject to reasonable conditions for the protection of public health) for 28 days after notification of the revocation. If the operator appeals during this 28 day period, the premises may continue to operate until the Tribunal determines the appeal or the appeal is withdrawn.

Role of Agricultural Departments

5.60 In England, MAFF's Meat Hygiene Division and the Veterinary Public Health Unit (VPHU) (both part of the Joint Food Safety and Standards Group) advise Ministers on meat hygiene policy and the licensing of meat plants under the relevant Regulations. Similar functions are carried out in Scotland by SOAEFD and in Wales by WOAD for the respective Secretaries of State. MAFF has recently set up a review team to carry out a thorough review of meat hygiene legislation. This will look in particular at enforcement powers to ensure that they are sufficiently wide ranging and flexible to deal with short term and long term problems at meat premises.

Role of Meat Hygiene Service (MHS)

5.61 The MHS, which was established as a MAFF Next Steps agency on 1 April 1995, took over responsibility for enforcing hygiene, inspection and animal welfare at slaughter legislation in premises licensed under the meat hygiene Regulations in Great Britain. Until then this role had been carried out by over 300 local authorities. It discharges Ministerial responsibilities for supervision, inspection and enforcement of meat hygiene and animal welfare at slaughter legisation in over 1400 licensed premises in Great Britain including cutting plants and cold stores.

5.62 Meat Hygiene Inspectors (MHIs) work under the responsibility of Official Veterinary Surgeons (OVSs) in meat hygiene and inspection teams in licensed plants. The MHS directly employs over 1300 inspection staff (Principal Official Veterinary Surgeons, MHIs and OVSs and Meat Technicians) as well as 169 full time equivalent contract OVSs on meat hygiene work. These teams are responsible for ensuring that meat produced for sale for human consumption is processed hygienically. OVSs are the team leaders within a licensed plant, and as such, take full responsibility for hygiene, inspection and animal welfare supervision. Their role is to ensure that the work of the MHS team is carried out effectively and efficiently. The role of an MHI is to carry out post-mortem inspections of carcases, health marking and, where necessary, assist the OVS in ante-mortem inspections. Under the direction of the OVS they will also ensure that the necessary standards of hygiene are observed throughout the production process.

5.63 Veterinary Meat Hygiene Advisers of the VPHU and the State Veterinary Service (SVS) carry out an on going audit of MHS compliance with the requirements of hygiene legislation, Codes of Practice, and the MHS Operations Manual. An interim report of the first year's trial audit was published in April 1997. The full report of the audit covering the period June 1996 to 31 March 1997 will be published shortly and annually thereafter. Unannounced inspections of premises are also carried out to help achieve consistent assessment of standards by the MHS and SVS. The MHS publishes an Annual Report and Accounts each year, recording its financial progress, reviewing developments during the year, and reporting on achievements against the performance targets set by Ministers. The Report for 1996–97 was published in July 1997[3].

Raising hygiene standards

5.64 The Government has made clear its determination to put the consumer first and that poor hygiene practices in any premises associated with the production of food will not be tolerated. Accordingly, Ministers have instructed the Meat Hygiene Service to vigorously enforce the meat hygiene regulations. In addition, Ministers have also endorsed the eight-point action plan to drive up hygiene standards which was put in place in March 1997 by the then Government. The action points, and progress to date, are summarised as follows:

(i) the MHS was instructed to accelerate its work on defining standards for clean livestock, and to set these out in graphic form. Accordingly, additional illustrated guidance in the form of the Clean Livestock Policy booklet[4] has been issued to all MHS inspection staff and to every licensed red meat slaughterhouse. Additional training has also been given to ensure consistent enforcement. A publicity campaign is now well under way with regional roadshows providing training for MHS staff and presentations to industry members as well as a poster campaign at markets.

(ii) abattoir operators were warned that no carcase showing any signs of faecal contamination should be submitted for approval as fit for human consumption. Advice to MHS staff not to health mark any carcase showing signs of faecal contamination has been reissued and reinforced.

(iii) it was announced that findings of enforcement activity would be published on a regular basis. The first of the monthly enforcement reports was published in May 1997 and future editions will include information on dirty livestock and contaminated carcase rejection rates. In addition, Ministers announced in September 1997 that Hygiene Assessment System (HAS) scores for individual slaughterhouses and cutting plants would be published from January 1998.

(iv) Principal Official Veterinary Surgeons, who are the most experienced veterinary surgeons, were to be given a larger role in managing OVSs and meat inspectors. This has been done. Principal OVSs are being relieved of specific plant duties to focus on OVS performance, training and hygiene standards.

(v) MHS staff were to be given extra (additional) training in hygiene standards. This has been done. Additional formal hygiene training for all OVSs and inspectors was completed by 31 July 1997.

(vi) OVS attendance was to be stepped up at plants with poor hygiene scores. This has also been done by increasing the allocated hours of OVS attendance in low HAS scoring plants.

(vii) a new Industry/Government Working Group was to be set up to concert the drive to higher standards. The Working Group, which was established in March, produced Forward Programmes [5 and 6] for both the redmeat and poultry meat industries recommending:

- the tightening up the cleanliness standard for livestock being admitted for slaughter for human consumption (red meat industry only);
- the implementation of HACCP (Hazard Analysis and Critical Control Points) in slaughterhouses on a voluntary basis; and
- the creation of an industry-wide hygiene training and certification scheme, to be drawn up by the Meat Training Council.

The Programmes were welcomed by Ministers who have asked for a review of progress after 6 months.

(viii) the State Veterinary Service would intensify its audit activity which will provide the basis for yet further action. An enhanced audit programme has been agreed. There will also be unannounced SVS inspections of plants with HAS scores of less than 65.

Finally, Ministers have made clear to the Chief Executive of the Meat Hygiene Service that in appropriate cases infringement of the rules should result in prosecution and where appropriate, consideration would be given to the revocation of licences.

The food manufacture, retail and catering sectors

5.65 The Food Safety Act 1990 places the onus on the food industry to ensure that the appropriate checks are in place to ensure that the food it offers for sale is safe. Traditionally the food manufacturer has relied largely on microbiological testing of raw materials and products to ensure safety. It is now recoginsed that this approach is not the best way to ensure safety, and authorities world-wide now advocate the HACCP approach to safety assurance, not only in manufacturing, but in all sections of the food industry. The nature of the HACCP approach is outlined in Chapter 4.

5.66 As described in Chapter 4, the implementation of five out of the seven HACCP principles is a legal requirement for most food businesses, under the provisions of the Food Safety (General Food Hygiene) Regulations 1995, which implemented Council Directive 93/43/EEC on the hygiene of foodstuffs.

5.67 The need for businesses to operate hazard management systems based on HACCP principles represented a radical new approach. It presented particular challenges to industry and enforcers. In the UK the implementation strategy has been broad based with its foundation in an educative approach with contributions from central Government, trade organisations and enforcement officers (EHOs). This has included:

- work on the development of Voluntary Industry Guides to Good Hygiene Practice which include HACCP issues;
- seminars, organised by DH, which informed and educated EHOs and businesses on the new requirements;
- a series of leaflets aimed in particular at small businesses; and
- a poster highlighting practical food hygiene issues, including hazard analysis.

Accelerated HACCP

5.68 On 19 August 1997 the Government announced the provision of an extra £19 million to improve the safety of high risk premises including butchers' shops. As well as enhancing enforcement in high risk premises, including butchers' shops, this extra money will support a range of measures such as the provision of training, advice and literature which will speed up the implementation of HACCP based safety controls in butchers' shops. The money will also help validate approaches to the implementation of HACCP such as the use of generic HACCP models to speed up HACCP implementation in wider food industry sectors, as they are developed.

5.69 In addition there are an number of Statutory Guides to Good Hygiene Practice produced by industry in conjunction with enforcers and consumer interests. These are either published or are currently in preparation covering a range of different sectors including catering, retail, markets and stalls, and wholesale activities.

Food Micromodel

5.70 In the late 1980s, MAFF began a five year programme of research aimed at developing and validating reliable computer models for predicting the growth, survival and death of food poisoning bacteria. The output of this research was Food Micromodel—a software package which is capable of predicting how micro-organisms will behave in food under various physical conditions. It is considered to be the leading predictive microbiology software system world-wide, differing from others which are available in that the models have been extensively validated against data on how bacteria behave in real foods.

5.71 Food Micromodel is available to all those involved in food safety including Government, enforcement authorities, the food industry and teaching. Food manufacturers can use it to establish whether pathogens can grow or survive in their products and processes. It can be used as a source of general advice and information on how and whether food poisoning bacteria are likely to grow and help in identifying and controlling food poisoning risks throughout the food chain. It can be used in HACCP to help identify those parts of the food production process where risks of the growth or survival of bacteria are greatest. It can also be used in the development of new food products to help determine the safety of particular product formulations and reformulations and therefore to reduce the amount of laboratory testing required during development.

5.72 Food Micromodel is marketed under licence and can be purchased on an annual fee basis for about £1,000. To date approximately 200 copies have been sold world-wide and new models continue to be developed.

Food Hygiene Education

Industry

5.73 Although it is the responsibility of the food industry to ensure that the food it produces is safe, particular education initiatives are taken by Government to emphasise the importance of following the correct procedures. In order to increase awareness of food hygiene requirements and good practice, the Government has issued a series of publications as a guide to the food industry. These guides cover the Food Safety (General Food Hygiene) Regulations 1995[7], Food Safety (Temperature Control) Regulations 1995[8], Guidelines for the Safe Production of Heat Preserved Foods[9], Code of Practice for the Manufacture of Vacuum and Modified Atmosphere Packaged Chilled Foods[10], and identifying and controlling food hazards. There is also a guide which is specific to the catering industry[11]. Further examples are the development of a simple 10 point plan for butchers producing cooked meat, development of a HACCP plan for caterers, guidelines for the safe production of heat preserved foods, and a practical introduction to HACCP for small businesses. Research suggests that these publications are well received, awareness of their existence is high, they are user friendly and consequently usage is high. In addition to the guidance promulgated by Government, industry has issued guides on the food hygiene and temperature control regulations. There is also a guide to good hygiene in the catering industry, and others, including a guide for the retail industry, are in preparation. Specific initiatives to improve standards include an on-farm milk pasteurisation campaign aimed at increasing awareness of the importance of pasteurisation including control of the process, and the programme to raise hygiene awarness in the meat and poultry industry (see paragraph 5.64).

The Consumer

5.74 The Government will continue to promulgate food hygiene advice through a wide range of Departmental publications such as "Food Safety", "Catering from Home for Large Functions", "Keeping Food Cool and Safe", and "While You are Pregnant". These publications are promoted at suitable venues, where food safety demonstrations on techniques and best practice are also undertaken. There is also the opportunity to highlight the food safety messages through the free publicity offered by newspapers, magazines, radio and television. The Government also supports industry initiatives aimed at the consumer such as the Food and Drink Federation's Foodlink campaign and national Food Safety Week.

5.75 For a number of years, DH has funded questions in the annual ONS Omnibus survey. These are designed to provide information on consumer knowledge of food safety and hygiene practices, including awareness of the CMO's advice. In addition, both DH and MAFF have funded research to assess consumer practices in the home and it is hoped that the DH funded study of Infectious Intestinal Disease will also provide information on consumer behaviour. All of these initiatives will allow an assessment to be made of the success of the current publicity campaigns and whether there is a need to consider alternative ways of promulgating food hygiene advice. The recent establishment of a Risk Communication Unit will help ensure that consumers get the food safety information they need.

5.76 There is an obvious benefit in promoting food hygiene messages to consumers at an early age. Industry initiatives have been targeted at schools. The Government have co-funded British Nutrition Foundation schools packs which include food hygiene advice. The packs are designed to be used as a teaching aid for pupils aged 5–16. This issue was also mentioned in the Pennington Report, and UK Health Agriculture and Education Departments are working together on developing proposals to raise the profile and increase the coverage of food hygiene in schools.

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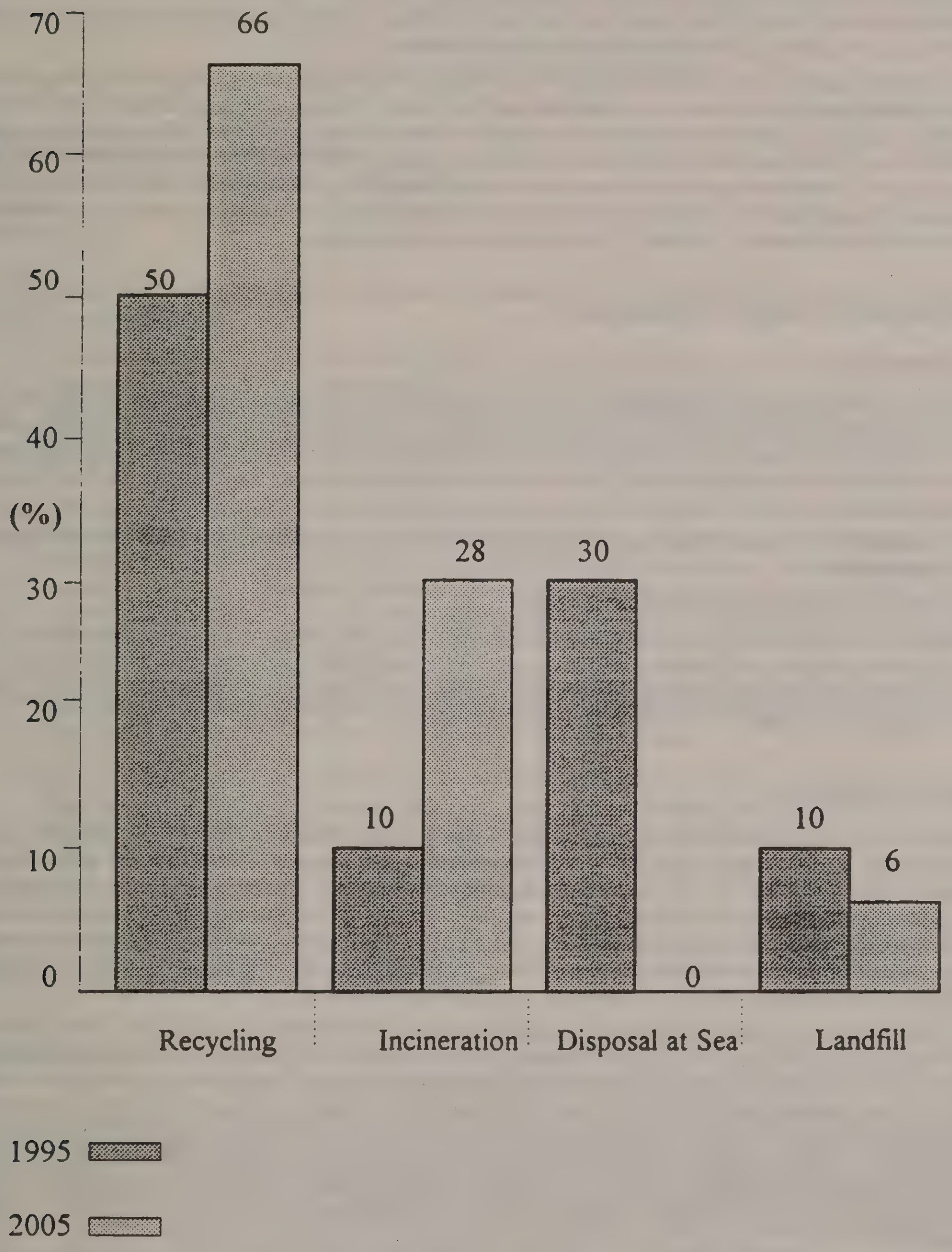
Annex

WASTE MANAGEMENT OF SEWAGE SLUDGE IN 1995 AND EXPECTED IN 2005
(see paragraph 5.32)



CONTROLS ON THE USE OF SEWAGE SLUDGE IN AGRICULTURE

1. The uncontrolled application of sewage sludge to agricultural land is a potential source of harm to human, animal and plant health and soil productivity because of contamination by pathogenic organisms and toxic substances such as heavy metals. It may also give rise to complaints about smell and appearance. The objective of controls is to limit these potential adverse impacts but to allow the recovery of value from sewage sludge in the form of plant nutrients and organic matter.

2. The current *specific* controls are Directive 86/278/EEC, the Sludge (Use in Agriculture) Regulations 1989 (as amended) which implement the Directive and the Code of Practice for Agricultural Use of Sewage Sludge. More general statutory provisions such as those to prevent water pollution and nuisance also apply. The specific controls are based on a considerable body of research and the deliberations of expert committees over many years. Their development incorporates not only basic principles of public health protection but specific research and experience of farming and use of sewage sludge. The controls are enforced in England and Wales by the Environment Agency. The main features are as follows:

Directive 86/278/EEC and the 1989 Regulations

Disease protection

3. To protect human and animal health from the transmission of disease the Directive and the 1989 Regulations prohibit the use of sludge or the supply of sludge for use on certain crops unless precautions are taken. The precautions reflect the likely prevalence of pathogenic organisms in the sludge and such factors as their survival in the environment and other barriers to transmission along the food chain. For example, use is prohibited on:

(i) grassland and forage crops unless grazing or harvesting is delayed for three weeks following application,

(ii) fruit or vegetable crops which are growing,

(iii) ground intended for the cultivation of fruit and vegetable crops (which are normally in direct contact with the soil and normally eaten raw) for a period of 10 months preceding harvest,

(iv) any agricultural land, if the sludge is untreated, unless it is injected into the soil or ploughed in as soon as practicable.

Potentially toxic elements

4. The Directive and the Regulations introduce limits on the concentration of specific heavy metals in soils on which sludge is to be spread (and the rate of increase of concentration) to protect soil fertility and to prevent concentrations which may be toxic to plants, animals or humans. The heavy metals included are zinc, copper, nickel, cadmium, lead and mercury. A regime is set out for monitoring metal concentrations in sludges and soils and for record keeping so that metal accumulation can be tracked. Sludge applications are prohibited once the soil concentration limit is reached. The time when this will happen depends on the pre-existing natural background levels and other inputs of metals to the soil.

5. The protection afforded by the heavy metal limit values was last reviewed in detail in 1993. (Reviews on Soil fertility aspects of potentially toxic elements and Food safety and relevant animal health aspects of potentially toxic elements.) The conclusions were reassuring on the level of protection afforded by the current rules but it was recommended that continued efforts should be made to reduce the input of metals into agricultural land from all sources, including sewage sludge, and that the rules governing the disposal of sewage sludge to land should be kept under review. In response, the last Government decided, as a precautionary measure and pending the results of further long term research into possible effects on soil microbiology, to reduce the advisory limits for zinc and cadmium in the Code of Practice in certain circumstances.

6. Levels of metal contaminants in sludge have declined significantly since the Directive was adopted. Generally, it is the recommended limits on phosphorus and nitrogen addition to land rather than the limits on metal additions which determine the quantity of sludge which may be applied each year.

Code of Practice for Agricultural use of sewage sludge

7. The Code of Practice complements the Regulations in that it includes advisory soil concentration limits for metals not covered by the Directive and Regulations (ie molybdenum, selenium, arsenic and fluoride). It also contains more detailed advice on managing metal concentrations in grassland to prevent undesirable accumulation on the surface. It gives specific example of types of sludge treatment likely to be effective against *Salmonella,* the eggs of the beef tapeworm *Taenia saginata,* potato cyst nematodes and a range of viruses as well as providing more detail on the no growing periods for certain crops following sludge application.

8. On more general aspects of the use of sludge on agricultural land, the Code provides advice on managing the operation to avoid, for example, pollution of watercourses and nuisance from odour.

PART 2: OTHER FOOD SAFETY ISSUES

Chapter 6: Safety of Chemicals in Food

Introduction

6.1 This section considers the food safety risks to consumers from chemicals in foods. These chemicals fall into four main groups:

(a) Food additives which are intentionally added to food for technological reasons (eg preservatives, colours etc). In some cases, the presence of the chemical may improve the safety of food by, for example, inhibiting microbiological growth or preventing chemical degradation. The toxicological properties of these food additives are carefully assessed by expert committees before their use is permitted.

(b) Chemical contaminants which may enter food at any part of the chain from the "farm to plate". The sources include animals grazing on contaminated land, fish feeding in contaminated waters, formation of mycotoxins under poor storage conditions and contamination during processing and storage, eg from packaging materials. The toxicological properties of the more common contaminants such as the heavy metals lead and cadmium, the polychlorinated dibenzo-*p*-dioxins and dibenzofurans (dioxins) and the mycotoxin, aflatoxin, are relatively well characterised.

(c) Toxins which are inherently part of a foodstuff such as the alkaloid, solanine, found in potatoes. The possible interactions of these natural toxins with other compounds present in a normal diet and their risks or benefits for the consumer are much less well understood.

(d) Those chemicals which are deliberately consumed by individuals in the form of dietary supplements; these may represent either normal nutrients consumed at dosages so extreme as to give rise to toxicity, or toxicants not normally encountered in the diet.

Assessing and Managing Risks from Chemicals in Food

Uncertainties

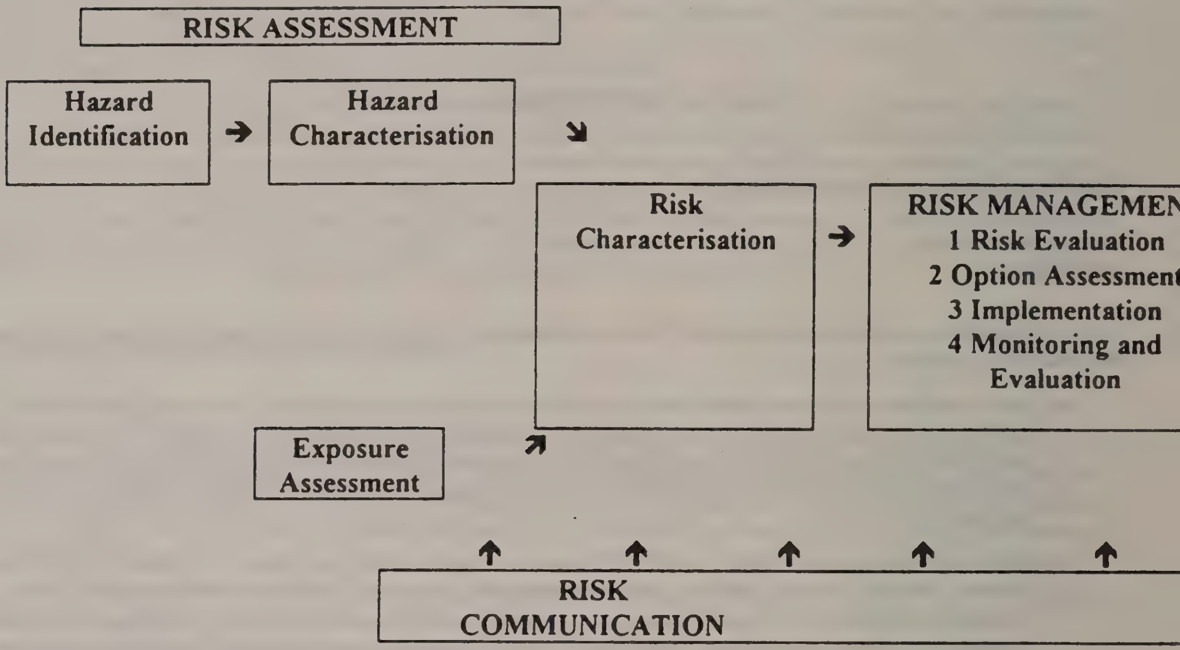
6.2 It is important to manage the risks associated with the presence of chemicals in food by effectively implementing appropriate measures to protect the public. For each chemical, it is necessary to assess the nature of the hazard, its scope and severity and the management options available, taking into account the health and economic concerns as well as consumer preceptions of the risks and the potential consequences of any action. The management options include regulatory actions, advisory changes to manufacturing or agricultural practices and targeting public health advice to specific consumer groups.

The risk analysis framework

6.3 The principles of risk analysis, which encompass both risk assessment and risk management, have been set out in recent reports from a number of international organisations, most noticeably as a result of recent expert consultations convened by the Food and Agriculture Organisation of the UN (FAO) and the World Health Organisation (WHO). The scheme can be represented in a number of ways, the simplest being as set out below.

Risk Analysis Scheme as Developed by FAO and WHO at the Risk Analysis Consultation (1995)

RISK ANALYSIS



6.4 The important points underlying the scheme are that

(a) risk assessment and risk management are separate but interdependent processes;

(b) both are also structured processes, with each having its own 4-step procedure;

(c) risk communication is to be seen as a two-way process of dialogue between the risk assessors and risk managers and the stakeholders in the process.

6.5 The process requires close liaison between those responsible for the risk assessment and risk management, and for those dealing with the different parts of risk assessment. In the case of food chemicals, the formal position is that the risk managers are MAFF—primarily responsible for the hazard identification step, ie deciding what needs to be examined—and the Committee on Toxicity of Chemicals in Food, Consumer Products and the Environment (COT) which has then traditionally been responsible for advising on the hazard characterisation step. The COT normally does this by extrapolating the results of animal testing to the human situation. The European Commission's advisory committee—on the Scientific Committee for Food (SCF)—is playing an increasing role in the safety evaluation of chemicals. For example, the SCF evaluates chemicals used in the manufacture of plastic food contact materials to ensure that consumers are protected against unsafe levels of the substances migrating into food. Exposure assessments are carried out in MAFF, and then the subsequent risk management steps are carried out by MAFF, advised as appropriate by the Food Advisory Committee (FAC).

Intakes of Chemical in Food

6.6 The food chemical surveillance programme is the cornerstone of the Government's commitment to identifying and managing the risks to consumers from exposure to food chemicals. This programme generates the following type of information:

(i) levels of chemicals in different foods;

(ii) consumption patterns of foods by different sections of the population;

(iii) intakes of food chemicals by different consumers; and

(iv) the major dietary sources of the food chemical for at risk groups.

When this information is fed into the risk assessment machinery, it is possible to identify any at risk groups and critical foodstuffs and to then target the necessary advice or action to manage the risk. Where the risk is significant and advice with voluntary action would not be sufficiently effective, national or EC regulatory controls are put in place. Inevitably, even where regulation is pursued, clear advice and voluntary action are required to have an immediate impact on the level of risk.

Food Chemical Surveillance

Background

6.7 The food chemical surveillance programme is made up of surveys in the following 11 discrete areas:

- Chemical contaminants from food contact materials.
- Dietary surveys.
- Food additives.
- Food authenticity.
- Inorganic contaminants.
- Naturally occurring toxicants.
- Nutrients.
- Organic environmental contaminants.
- Pesticide residues.
- Radionuclides.
- Veterinary Medicine residues in animal products.

These surveys play a major role in identifying the risks from chemical contaminants in foods. The total programme has an annual expenditure of about £8 million and includes over 145,000 analyses on 13,000 samples of foods from different stages of the UK's food chain and different geographical locations.

6.8 For each of these areas of the programme there is a working party or advisory group whose role is to advise MAFF on the development and management of the specific part of the programme. Members are appointed to the working parties for their relevant technical expertise. They include scientists drawn from academia, enforcement authorities, industry, DH, MAFF, its agencies and other government departments. In addition, each working party now has a consumer representative, or is in the process of appointing one. The size of membership is the minimum necessary to cover the range of expertise required by the area of work. All independent members are required to declare their personal and non-personal interests on a register held by the secretariat of the working party. This information is available from the secretariats. The Food Advisory Committee maintains an overview of the whole programme.

6.9 Surveys of the occurrence of chemicals in food, the nutritional quality of food and the authenticity of food are undertaken for a range of reasons, primarily:

- statutory requirements: EC Directives on pesticides and veterinary medicines require Member States to undertake national surveys and increasingly the Commission seeks to specify the size and content of those surveys. The Commission has recently extended the need for monitoring to nitrate in lettuce and spinach;
- to provide information on foods eaten by the general population or groups of special interest (eg children) so that intakes of a wide range of additives, contaminants and nutrients can be estimated;
- to measure directly the nutrient or chemical content of whole diets. These surveys may be repeated periodically to detect trends, for example, the Total Diet Study;
- to investigate specific issues, for example, the impact on the food chain of emissions of dioxins from incinerators; and
- to provide data on the levels of chemicals in the UK food supply or in imported foods to inform negotiations or codes of practice on food composition.

The food chemical surveillance programme is a mixture of the above types of surveys; the balance will vary from year to year.

6.10 In general, the surveys provide a view of a small part of the food chain at a given moment in time, in other words a snap-shot. Constraints on resources mean that the number of samples analysed is rarely enough to allow every brand of food on the market to be analysed or to enable several batches of the same brand to be examined.

Reporting Arrangements

6.11 Following media criticism in 1993 over the delay in releasing results of patulin contaminants from a survey of apple juices, MAFF has continuously sought to improve the ways in which survey results are published. The essential features of the current system are:

- the results of surveys are placed in the public domain as soon as practically possible. Advice is obtained first from expert advisory committees to set sensitive survey results into context prior to publication. Summaries of the survey results are given in the monthly MAFF/DH Food Safety Information Bulletin and full details including (from October 1997) the brand names of samples analysed are available on request and also on the MAFF Website on the Internet.
- when any survey identifies a specific food safety problem, immediate action is taken to warn consumers. Expert advisory committees are consulted as necessary. News Releases are issued with details of the foods involved and other action is initiated as necessary. The remaining results from the survey are put into the public domain as quickly as possible on completion of the survey via the MAFF/DH Food Safety Information Bulletin.
- a list of planned surveys is made available to enforcement authorities, consumer organisations and industry.
- contractors undertaking the surveys on behalf of MAFF are encouraged to publish details of the surveys in peer-reviewed scientific journals to establish the scientific validity of the surveys.

Surveys of Food from Around Point Sources

Background

6.12 As part of the continuing food surveillance programme, food produced or sold close to possible sources of contamination, such as industrial sites, has been analysed for possible contamination. Such point source surveys should indicate whether elevated levels of contaminants can be found in such areas as opposed to those that may be encountered as the result of a particular incident, for example, a chemical spill or fire.

6.13 MAFF has been measuring dioxins and polychlorinated biphenyls (PCBs) in food since 1989. Annual surveys of dioxins in samples of cows' milk from individual farms in the vicinity of potential industrial sources have been carried out since 1993 and for PCBs since 1994. A survey of potentially hazardous elements in cows' milk and vegetables from farms and allotments near to possible industrial sources of these elements was also carried out in 1996–97. JFSSG will continue to carry out surveys for contaminants in foods produced in the vicinity of industrial point sources.

Current situation

6.14 JFSSG has recently completed and published the results of a number of surveys of dioxins and PCBs in cows' milk from farms near industrial sites; a survey on hydrocarbons in foods from shops in petrol stations and stalls or shops on busy roads; and a survey on hexachlorobenzene in cows' milk from farms close to industrial sites. A survey of hazardous elements in cows' milk and vegetables produced near to industrial sites has also just been completed and will be reported soon.

Future Developments

6.15 Although closely controlled by the Environment Agency, industrial sites are likely to remain a potential source of food contamination. Surveillance of food from the vicinity of such sites is therefore expected to continue. In particular, elevated levels of dioxins and PCBs have been detected in some samples of cows' milk from farms close to industrial sites in the Bolsover and Rotherham areas although there is no risk to consumers of milk from these areas. Further surveys will be necessary in order to monitor closely the situation and to continue to ensure the safety of food from these areas.

The Contaminants in Food Regulations 1997

Background

6.16 European *Council Regulation (EEC) No 315/93 laying down Community procedures for contaminants in food,* is a framework measure (introduced under Article 100a of the Treaty of Rome which is the legal base for food harmonisation measures) which enables the European Commission to establish limits for those chemical contaminants in foodstuffs which are not the subject of more specific Community rules.

6.17 The first proposal made under this Regulation was adopted in February 1997 as *Commission Regulation (EC) No 194/97 setting maximum levels for certain contaminants in foodstuffs.* This sets maximum levels for nitrate in lettuce and spinach. Negotiations on two further proposals which will amend Commission Regulation (EC) No 194/97 to include maximum limits in food for lead and cadmium and mycotoxins are currently taking place.

6.18 *The Contaminants in Food Regulations 1997 (SI 1997 No 1499/97)* which came into force on 4 July 1997 make provision for the enforcement and execution in Great Britain of *Commission Regulation (EC) No 194/97.* Similar Regulations have been made in Northern Ireland. *The Contaminants in Food Regulation 1997* also provide for the operation of the optional derogation contained in the Commission Regulation. This exempts lettuce and spinach grown for the domestic market from the limits for a transitional period provided that growers follow codes of Good Agricultural Practice and levels of nitrate in these vegetables do not pose a risk to consumers' health.

Current situation

6.19 The two further proposals which will amend *Commission Regualtion (EC) No 194/97* referred to above are:—

Commission proposal for a Regulation to set limits for lead and cadmium in raw/unprocessed foodstuffs

(i) This proposal is a harmonisation measure being introduced on public health grounds as longstanding toxicological concerns exist on these metals. The Regulation is also intended to prevent imports of grossly contaminated foods. The proposal includes specific limits for foods that contribute significantly to dietary intakes, either by their high lead or cadmium contents, or through high levels of consumption. The current proposal covers cows' milk; meat of cattle, sheep, pigs and poultry (except game); liver; kidney; fish; shellfish; cereals; vegetables; fruits; fats; oils and wines.

(ii) The proposed limits are generally lower than those specified in the existing UK regulations for lead, *The Lead in Food Regulations 1979 (SI 1979 No 1254)* as amended. There are no UK specific statutory or guideline limits for cadmium in food.

Commission proposal for a Regulation on mycotoxins

(iii) Mycotoxins are a group of chemicals which are produced by fungal moulds on food. The current proposal seeks to harmonise existing measures in Member States on one particular type of mycotoxin, aflatoxin. It sets maximum levels for total aflatoxin and aflatoxin B_1 in groundnuts, nuts, dried fruit, cereals and milk. Agreement to the draft Regulation is expected by majority vote at the Standing Committee for Foodstuffs in February 1998.

(iv) The UK currently has regulations on aflatoxins, *The Aflatoxins in Nuts, Nut Products, Dried Figs and Dried Fig Products Regulations 1992 (SI 1992 No 3236).* The Commission proposal would therefore extend the Regulations to cereals, milk and other dried fruit.

6.20 The UK is actively involved in these negotiations and has recently prepared two papers on methods of sampling and analysis for lead and cadmium and mycotoxins on behalf of the Commission. These papers which are currently being discussed in Commission Working Groups should enable member States to reach a common interpretation of data and ensure uniform enforcement of the Regulations across the EU.

Future Developments

6.21 The Commission is obliged to review the limits for nitrate in lettuce and spinach given in Regulation (EC) No 194/97, on the basis of monitoring data provided by Member States, before October 1998. The results of the 1996/97 UK Monitoring Programme were submitted to the Commission in June 1997 and will be discussed together with those of other Member States at a Commission Working Group meeting to be held in November this year. UK monitoring is continuing with the 1997/98 programme, the results of which will contribute to this review. They will also be used, together with the findings of a research project, to help assess the effectiveness and, if required, revise the Codes of Good Agricultural Practice.

6.22 UK participation in the continuing negotiations on the lead and cadmium and mycotoxins proposals is necessary to promote UK interests and to seek to ensure that the final Commission Regulations are acceptable to the UK. Further secondary legislation will be required to implement them. This is expected to be achieved by amendments to *The Contaminants in Food Regulations 1997.*

6.23 A further proposal harmonising limits for an additional mycotoxin, ochratoxin A, is likely to be forthcoming in the near future. A preliminary discussion document has been tabled by the Commission and was briefly discussed in July. A proposal to limit yet another mycotoxin, patulin, is also likely once existing proposals have progressed further.

6.24 The Commission is expected to further extend the scope of *Commission Regulation (EC) No. 194/97* to include additional contaminants and foods. Future proposals could cover dioxins, other persistent hydrocarbons and arsenic.

Dietary Supplements

Background

6.25 Dietary supplements are a diverse group of products ranging from vitamin and mineral supplements to royal jelly taken to enhance health and well-being. Supplements which do not have a medicinal licence are considered to be food and regulated accordingly. A safety based approach is taken which means that there are no specific restrictions on the types and quantities of vitamins and minerals that can be sold provided that they are not injurious to health (certain vitamins and minerals are known to be toxic in excess). Maximum levels of vitamins and minerals allowed in dietary supplements are defined only in a few cases.

6.26 The UK's approach to controlling dietary supplements, based on safety considerations is one of the most liberal within the EU. Most other Member States consider maximum levels of supplements in terms of nutritional need, and thus set them with respect to the Recommended Daily Allowance (RDA).

Future Action

6.27 The European Commission has recently circulated the discussion document "The Addition of Vitamins and Minerals to Foods and Food Supplements". The need for the discussion paper has arisen because of increasing trade problems between Member States caused by the differences in legislation in this area. It is possible that the EC may press for the harmonisation of regulations across the EU.

6.28 Officials from MAFF, DH and the Medicines Control Agency are exploring ways in which maximum safe levels of vitamins and minerals can be established and to set levels, where possible, for individual nutrients. This will be used to inform future EU discussions of the subject.

Use of sewage sludge on land

6.29 The application of sewage sludge to agricultural land is a potential source of chemical contamination of the food chain. This is described in more detail in Chapter 5.

Future Developments

6.30 More information will be required to inform the continuing review of the rules governing the use of sewage sludge on agricultural land, and in particular in relation to organic contaminants. However, future research requirements will be largely dependent on the results of current projects.

Endocrine Disrupters

6.31 Links have been proposed between apparent adverse trends in reproductive health in humans and wildlife and the presence of certain chemicals in the environment and food, although there is no conclusive evidence. A number of these man-made and naturally occurring chemicals which have been demonstrated to have week oestrogenic or other endocrine disrupting activity are recognised contaminants or naturally occurring constituents of food. They include the contaminants alkylphenols, phthalates, bisphenol A, some organochlorine pesticides, polychlorinated biphenyls and dioxins, and some naturally occurring substances such as phytoestrogens which are found in several plant foods (eg soya). These dietary endocrine disrupters are being studied throughout the world and the Government has a sizeable programme of research in this area. In particular, the major route of human exposure to endocrine disrupters is likely to be through the diet and a major gap in current knowledge is the lack of robust estimates of human exposure to these dietary endocrine disrupters.

Food Intolerance

Background

6.32 The general term that is normally given to a non-psychological, reproducible and unpleasant reaction to a specific food or food ingredient is *Food intolerance*, this includes food allergy. *Food allergy* is a specific adverse reaction to food where there is evidence of an abnormal immunological reaction to the ingestion of food. The foods that cause intolerance reactions include eggs, cows' milk, fish, fruit, gluten, nuts, peanuts, cheese, chocolate, soy, sesame seeds and pulses. Only a few of these foods will elicit true allergic responses in sensitised individuals. These foods are tree nuts, peanuts, shell fish and sesame seeds; the other foods are more likely to produce undefined intolerance reactions.

6.33 The prevalence of food allergies in the UK is hard to define exactly. Many people with food allergies do not have their allergy properly diagnosed or are unaware that their symptoms are food related. However, in a market research surveyed around 4 per cent of the UK population have self-reported intolerance reactions to food. This compares with 11 per cent with hay fever and 8 per cent with asthma. Of the people with self-reported food intolerance reactions, only 10 per cent reacted to peanuts and of these only around 10 per cent had reactions that could be described as serious. Although this translates to a relatively small percentage of the population it does represent a significant number of people.

6.34 Certain individuals also face food safety risk as a result of suffering from extreme food allergies. These allergies are even more distressing as many sufferers of these extreme allergies are young children. The Government takes the whole issue of food allergies very seriously. The exact cause of food allergy is unknown but it is known that some individuals have idiosyncratic immune systems which react to the presence of particular proteins or chemicals.

Future Developments

6.35 The Government is targeting its intolerance work on people with severe food allergies, and particularly those with symptoms that could develop into life-threatening, anaphylactic reactions. MAFF is funding a major research programme aimed at identifying the causes of severe reactions to food and developing a diagnostic test for anaphylaxis, and is actively engaged in discussions with industry and others in order to increase awareness of the problem of severe allergies. There are also discussions in the European Union and with the United Nation's Codex Alimentarius Commission aimed at improving labelling of severe allergens in food. MAFF is also developing a campaign to increase caterers' awareness of this problem.

6.36 The Department of Health's Committee on the Toxicity of Chemicals in Food, Consumer Products and the Environment has established two Working Groups: the first, which is expected to report in the spring of 1998, has been tasked to advise on:

(i) whether there is an association between early exposure to peanuts and peanut products and the incidence of peanut allergy later in life, and, if so,

(ii) what advice should be given about the consumption of peanuts and peanut products by pregnant and lactating women, infants and young children.

The second has terms of reference which require it to critically assess and review the data on food intolerance and also the evidence that food can cause hyperactivity in children and associated behaviour in adulthood. As part of the assessment, the Group will:

(i) consider whether the prevalence of each effect is increasing;

(ii) rank those foods identified as commonly causing adverse reaction, both in terms of prevalance and severity of reaction;

(iii) assess the mechanism underlying each effect; and

(iv) in each case, identify those individuals at risk.

Food Additives

Background

6.37 The use of most classes of food additive in the UK has for many decades been subject to statutory controls, based on the demonstrable need for each additive and a scientific evaluation of its safety for the consumer. The UK has a good reputation, both nationally and internationally, for the quality of these controls, which have relied on a rigorous approval process involving two independent government expert committees, the Food Advisory Committee (FAC) and the Committee on Toxicity of Chemicals in Food, Consumer Products and the Environment (COT). After long and difficult negotiations in the early 1990s agreement was reached on a package of harmonised EC legislation in the form of three Directives covering the use of colours, sweeteners and "additives other than colours and sweeteners" (commonly referred to as "miscellaneous additives"). The last of these incorporates rules on 23 classes of additive, including preservatives, emulsifiers, thickeners and glazing agents.

6.38 Although legislation is gradually being developed in Brussels, flavourings are not yet subject to the type of detailed controls outlined for most other food additives. The use of most flavourings therefore remains subject to the general provisions of the Food Safety Act 1990 and in Northern Ireland, the Food Safety (NI) Order 1991. Processing aids (substances which are added during food manufacture, but which have no effect in the final food) are also not specifically regulated, though, as with flavourings, their use is subject to the general provisions of the Food Safety Act.

Colours, Sweeteners and "miscellaneous additives"

Legislation

6.39 The three additives Directives were implemented in Great Britain on 1 January 1996 by the following Statutory Instruments which were made under the Food Safety Act 1990:

The Colours in Food Regulations 1995;

The Sweeteners in Food Regulations 1995; and

The Miscellaneous Food Additives Regulations 1995.

Similar regulations were introduced in Northern Ireland.

6.40 There were transitional periods during which the previous rules could still be followed, but the last of these ended in March 1997, apart from provisions which have been made for the using up of old food stocks. The new harmonised legislation, which is part of the Single Market strategy, is based on principles of need and safety similar to those which have long underpinned the respective UK laws, although it differs in some respects in the detail.

Restrictions

6.41 Overall, the new EU rules are most proscriptive than our previous national regulations, although they reflect the UK food industry's most recent practice. For example, we previously allowed approved colours and sweeteners to be used in most types of food without specific limits but under the current legislation they are restricted to specific food categories and, in most cases, to specified levels of use. As a consequence, the scope for any future innovation in food products is now considerably restricted as any new use of an existing additive may require a change in EU legislation even though its safety might not be in question. Amendments were made earlier this year to the sweeteners legislation to cover some of the products which have been developed in recent years, and negotiations are currently underway similarly to update the rules on miscellaneous additives. Progress is however very slow.

6.42 In all cases, permitted additives must conform to purity specifications is laid down at the European level. In the case of miscellaneous additives, discussions on these specifications have not yet been completed, but they are expected to be finalised next year.

Safety

6.43 No additive is included in the permitted lists until its safety in use has been evaluated by the European Commission's Scientific Committee for Food (SCF). If the SCF considers that an additive is acceptable for food use, it will normally set an Acceptable Daily Intake (ADI). This is defined as:

> "an estimate of the amount of food additive, expressed on a body weight basis, that can be ingested daily over a lifetime without appreciable health risk"

and is expressed on a milligram per kilogram bodyweight per day (mg/kg bw/day). This approach to the safety assessment of substances deliberately added to food was established by the World Health Organisation and Food and Agriculture Organisation many years ago and is accepted worldwide. Where the SCF has recommended that an additive should be subject to specific conditions of use, this advice has been followed in the legislation.

6.44 The safety of food additives is under continuous review and whenever new evidence comes to light this is reviewed by the relevant expert committee. If there was an immediate health concern, the data could be reviewed in the UK by officials and referred to the COT at very short notice. The Treaty of Rome allows Member States to take justifiable unilateral action to protect public health when necessary. However, in other circumstances the safety assessment of food additives would be carried out in Brussels by the SCF.

6.45 The EU is currently developing a common system of monitoring intakes of individual food additives, and will review the legislation on the basis of these findings to ensure the continuing protection of consumers.

Flavourings

6.46 At present, there is no detailed harmonised legislation governing the use of flavourings in the European Community. This is generally because such substances are used at such low levels that individual intakes are extremely small. However, Council Directive 88/388/EEC provides a framework by defining certain categories of flavourings which may eventually be regulated and including certain general provisions on purity and labelling and maximum levels for certain specified substances. These specific provisions are implemented in Great Britain by the Flavourings in Food Regulations 1992. Similar regulations exist in Northern Ireland.

6.47 EC Regulation 2232/96 on flavouring substances, made under Directive 88/388/EC, came into force on 23 November 1996. This regulation lays down a procedure for the establishment of a positive list of chemically-defined flavouring substances which will be permitted for food use across the European Community. Under this regulation, each member state is currently drawing up a list of all the flavouring substances marketed in their territory. On the basis of these lists, the Commission will draw up an EU-wide register of substances which will be examined for safety in use by the SCF, and all those approved will be included in a positive list of permitted flavourings. This list expected to come into force in 2004.

6.48 Controls on the use of additives in flavourings, also made under Directive 88/388/EC, are currently under discussion and are expected to be finalised next year. Any further controls on the use of other flavourings covered by this Directive are unlikely in the near future.

Enforcement

6.49 Enforcement of all regulations made under the Food Safety Act 1990 is the responsibility of local authorities. In the same way, in Northern Ireland enforcement of food safety legislation largely falls to district councils. MAFF has produced Guidance Notes for the various additives regulations, in consultation with local authorities and other UK agriculture and food departments, but these make clear that definitive rulings on any point of dispute can only be given by a court of law.

Chemical migration from food contact materials

Background

6.50 Legislation on food contact materials and articles protects consumer health by requiring that "materials and articles", such as packaging, do not transfer their constituent chemicals into food so as to harm health. The framework Directive *89/109/EEC* sets out the scope and general requirements of this legislation and provides for directives on specific food contact materials.

6.51 Specific directives detail the restrictions on plastics, regenerated cellulose film and ceramics. For example the controls on plastics include lists of permitted starting materials, overall and specific migration limits, compositional limits, and rules for testing for compliance. These restrictions involve toxicological assessments by the Scientific Committee on Food, substance by substance, so that starting substances for food contact plastics would be safe if they were to be found in food.

Current situation

6.52 Negotiations in the European Union (EU) are currently focused on completing the food contact plastics legislation. This will involve the expansion of lists of permitted, safe chemicals to include substances added to plastics or used in plastics production. The European Commission is also considering how to take full account of variations in food consumption and the extents to which plastics are used to package food, in calculating specific migration limits (para. 6.51).

6.53 Discussions are also in progress at the Council of Europe to prepare resolutions and guidelines on other food contact materials and articles—such as paper and board and metals—that are not specifically covered by European legislation at present.

6.54 European Commission Directives on this topic have been widely accepted and implemented. Indeed the UK is fully up-to date in implementing the Directives, which have similar standing to approvals by the US FDA in aiding international trade and ensuring consumer protection.

Future Developments

6.55 Work on specific directives for other food contact materials will not begin for another two or three years until the plastics legislation is completed. It is envisaged that the European Commission will make proposals for specific directives on paper and board, metals and alloys, elastomers and rubbers, glass, wood, textiles and waxes. These directives will probably be based on the Council of Europe work referred to above.

CHAPTER 7: RADIOACTIVITY IN THE TERRESTRIAL AND AQUATIC FOOD-CHAIN

Background

7.1 Radioactivity is an all-pervasive feature of the natural background and everyone receives a small but measurable dose of radiation from natural sources. It is generally accepted that radiation can cause cancer even at very small doses and that any increase in dose is therefore associated with a finite increase in the probability of cancer induction, possibly decades after the exposure. The scientific evidence for this is based largely on studies of the Japanese atomic bomb survivors, but other more recent studies are not inconsistent. MAFF has been responsible for monitoring and assessing the impact of radioactivity in the food-chain since the late 1940s; DH has wider responsibilities for public protection from radiation. Basic scientific advice on risks and standards is provided by the National Radiological Protection Board, an NDPB sponsored by DH.

Legislative Background

7.2 Radiological protection is governed in the EU by the Basic Safety Standards Directive. This imposes specific limits on the radiation doses that may be received by workers or members of the public from artificial sources, and imposes a number of general requirements on competent authorities to carry out monitoring. There are no specific limits on radioactivity in food under normal circumstances. Following the Chernobyl accident, however, several EU Regulations were passed which would impose such limits in the event of a future nuclear accident, to ensure that the same standards are applied across the Union. The keeping and use of radioactive material and accumulation and disposal of radioactive waste are controlled by the Radioactive Substances Act 1993 (RSA 1993). As a result of the Environment Act 1995, enforcement of RSA 1993 is the responsibility of the Environment Agency in England and Wales and the Scottish Environment Protection Agency in Scotland. In Northern Ireland enforcement is carried out by the Environment and Heritage Service, part of the environment and heritage service of the Department of the Environment (Northern Ireland). Prior to the Environment Act 1995, MAFF was a joint authoriser with Her Majesty's Inspectorate for Pollution (HMIP); in Scotland authorisations were granted by the Chief Inspector of Her Majesty's Industrial Pollution Inspectorate (HHMIPI).

Radioactivity in Food

7.3 Radionuclides are present in the food-chain from a variety of sources. Natural radionuclides in food contribute an average of about 12 per cent of the natural background dose of the UK population. Other sources include weapons-test fallout, discharges from nuclear sites and other users of radionuclides (such as hospitals) and the fallout from nuclear accidents (eg Windscale and Chernobyl). The Ministry's activities in public protection can broadly be divided into three areas: surveillance, assessment and emergency planning.

Surveillance

7.4 MAFF Carries out a large programme of routine surveillance, which is published annually. The report "Radioactivity in Food and the Environment, 1996" (RIFE-2) was published in September 1997. The programme covers both the national diet and the food-chain in the vicinity of all major nuclear sites as well as a selection of other potential industrial sources of radioactivity. Nearly 6,000 samples of foodstuffs and environmental materials were collected and analysed. The results confirm that natural background is by far the biggest source of radiation dose to consumers. The highest exposures due the nuclear industry resulted from discharges of liquid wastes from Sellafield: the exposure of high-rate fish and shellfish consumers due to artificial radionuclides near Sellafield was 140 microsieverts (μSv, 14 per cent of the international limit. This can be compared to the average dose to the UK population due to natural background radiation, 2,200 μSv.

Dose Assessment

7.5 As well as assessing the radiation doses actually received by members of the public, using the results of the surveillance programme, the Ministry is also responsible for assessing the potential future doses that may arise from radioactive discharges from nuclear and other sites. The Radioactive Substances Act 1993 requires the Environment Agency to consult MAFF before issuing any authorisations for radioactive waste discharges or disposals (in Scotland it is for the Scottish Environment Protection Agency to consult the Secretary of State for Scotland). One of the Ministry's responsibilities is to assess the potential impact on members of the public. Such assessments are necessarily cautious, and the aim is to calculate the upper bound of the radiation doses likely to be received by the most exposed members of the public. These assessed doses are then compared with the dose limit and with any other targets or constraints set by Government policy. This information is included in the explanatory memorandum published by the EA when it goes to public consultations as any proposed new authorisations on variations. The Minister of Agriculture also has powers to call in any application or to issue directions to the EA, powers he shares with the Secretary of State for the Environment. In Scotland the Secretary of State has similar call-in and direction powers (in respect of SEPA).

Emergency Planning

7.6 It is generally held that another major accident of the scale of Chernobyl is extremely unlikely, but the possibility of such an event cannot be discounted. A smaller accident, resulting in some local environmental contamination, is less improbable. Detailed plans for response to such events have been prepared and are exercised frequently. At present, exercises organised by the nuclear industry or the MOD average about 10–12 per year and the Ministry is actively involved in all of these. The primary objective in the event of any such accident will be to ensure that no food contaminated in excess of the EU limits reaches the consumer. If necessary, the Minster will exercise powers under the Food and Environmental Protection Act 1985 (FEPA). These powers were used to restrict the sale and movement of sheep contaminated as a result of the Chernobyl accident in 1986; restrictions are still in force in a small area of Cumbria and also parts of Wales, Scotland and Northern Ireland. No sheep can be moved from farms subject to controls until they have been individually monitored to ensure they are below the safety limit. The number of farms in Cumbria subject to controls has been reduced considerably in recent years but the problem is likely to persist for many years.

Chapter 8: Pesticides

8.1 The basis of the UK's regulatory system is that only approved pesticides can be advertised, sold, supplied, stored or used. Applicants for pesticide approvals must show that their products are effective, humane and pose no unacceptable risks to human beings, non-target species or the wider environment before approval will be granted. Pesticide manufacturers are required to provide a wide range of scientific data which are subject to rigorous scrutiny by the independent experts of the Advisory Committee on Pesticides. Only when Ministers in five Government Departments are satisfied on the basis of this expert advice that the product can be used without unacceptable risk will authority be given to put it on the market. All approved pesticide products are subject to routine review but any may be reviewed at any time if any evidence emerges concerning their safety. If appropriate an approval can be restricted or revoked entirely.

8.2 The approvals arrangements are backed up by an extensive programme of monitoring of foodstuffs for pesticide residues. Monitoring covers both home produced and imported food, is carried out by the Government's Working Party on Pesticide Residues, and costs about £1.7 million annually. The purpose of this monitoring is threefold: to back up the statutory approvals process for pesticides by checking that no unexpected residues are occurring, to check that residues do not exceed statutory maximum residue levels (MRLs) and to check that human dietary intakes of residues are at acceptable levels. Some 3,000–4,000 samples are analysed each year for a wide range of pesticides with the result that the number of individual pesticide/commodity combinations analysed annually runs into tens of thousands. The Working Party has an annual surveillance monitoring programme covering dietary staples (bread, milk and potatoes) and rolling programmes for cereals and cereal products, fish and fish products, fruit and vegetables and products of animal origin. Where residues are found in pesticides for which there is no statutory MRL, other internationally-agreed standards, for example Codex MRLs, are used as indicative levels for reporting results.

8.3 The results of this surveillance indicate that only about 1 per cent of samples analysed exceed an MRL. The MRL is not a safety limit and very few of these exceedances would result in an exceedance of the relevant acceptable daily intake (ADI)—which is the amount of a pesticide that can be consumed every day throughout life without harm. Although MRL exceedances rarely represent any concern in terms of consumer health, they may indicate possible misuse of pesticides. Most cases are found to result from isolated incidents, and further surveillance is carried out to confirm that there is no repetition. Where an ongoing problem is detected, enforcement is carried out. For UK produce, this may involve taking samples direct from growers' premises, while for imported produce consignments may be detained at the port of entry.

8.4 Recent examples of enforcement include misuse of fungicides on UK winter lettuce, where as a result of programmes in 1995 and 1996 2 growers were successfully prosecuted for using non-approved products, and residues of beta-HCH in Chinese rabbit meat above the MRL, where 4 out of 50 consignments tested were refused entry to the UK in 1994 and 1995. Neither of these programmes detected residues at levels of health concern. As part of the wider Government system to deal with food safety emergencies, statutory and administrative provisions are in place to respond to any wider risk to public health that could arise through pesticide residues in food. To date, however, such provisions have not been necessary for pesticide purposes.

8.5 A large amount of material on pesticides is published. Documents summarising data presented to the Advisory Committee on Pesticides along with their conclusions are published for the first evaluation of new pesticide chemicals or the review of existing ones. Additionally, the full results of monitoring by the Working Party on Pesticide Residues are published each year and a summary leaflet is also produced.

CHAPTER 9: VETERINARY MEDICINES

9.1 Veterinary medicines are controlled in the UK by European Community and UK legislation. A key feature of this legislation is that a marketing authorisation is required before any veterinary medicinal product can be placed on the market in the UK. Marketing authorisations are granted only after the product has undergone a rigorous assessment to establish its safety, quality and efficacy. Safety covers the safety and welfare of the treated animal, the operator using the product, the consumer (against residues of veterinary medicines in food products) and the environment. Companies seeking a marketing authorisation are required to provide a wide range of scientific data which are assessed by expert staff in the Veterinary Medicines Directorate (VMD). Both the company data and the VMD assessments are subject to rigorous scrutiny by independent experts on the Veterinary Products Committee (VPC) which has a statutory duty to offer advice on the safety, quality and efficacy of veterinary medicines to UK Health and Agriculture Ministers acting as the "Licensing Authority". The VMD and VPC may also be involved in marketing authorisations to be granted under the EU's centralised and decentralised procedures the work on which is co-ordinated by the European Medicines Evaluation Agency with scientific advice provided by the EC's Committee for Veterinary Medicinal Products. As well as regular reviews, if post authorisation monitoring or any new scientific data raise doubts about the safety of authorised products, marketing authorisations can be suspended or revoked.

9.2 In relation to food safety issues, post authorisation monitoring includes surveillance for residues of veterinary medicines in meat and other animal products. Before any new pharmacologically active substance can be included in an authorised veterinary medicine, maximum residue limits (MRLs) must be set and MRLs are being set for "old" active ingredients which were on the market before the relevant regulations entered into force. The scientific evaluation of data needed to establish MRLs is co-ordinated by the European Medicines Evaluation Agency and scientific advice is offered to the EC Commission by the Committee on Veterinary Medicinal Products. MRLs are then set in EC legislation and enforced in the UK under the Animals and Animal Products (Examination for Residues and Maximum Residue Limits) Regulations 1997 and similar legislation in Northern Ireland. These regulations also establish the legal framework for implementing EC requirements for residue surveillance which are co-ordinated by VMD. From 1 January 1998, so-called statutory surveillance will cover red meat, poultry meat and farmed fish. In anticipation of a further extension of the EC Directive to milk, eggs, wild and farmed game and honey on 1 January 1999, the UK's complementary "non-statutory" surveillance programme will apply the Directive's requirements for these products in 1998. In addition, the "non-statutory" programme will cover processed foods, including baby food. All findings of residues above the level of the relevant MRL (or all detectable residues where no MRL has been set) are reported by VMD in the quarterly Medicines Act Veterinary Information Service (MAVIS) and there is a fuller Annual Report on Surveillance for Veterinary Residues. The content of reports, reported results and future surveillance plans are scrutinised by the Advisory Group on Veterinary Residues (AGVR) which includes independent scientific experts and a consumer representative.

9.3 The latest Annual Report covering 1996 was published in July 1997. Of almost 39,000 samples of red meat examined 99.23 per cent contained no detectable residues. Only 93 (0.24 per cent) contained residues above the level of the "Action Level" (MRL or limit of quantification where no MRL set) with a further 208 (0.53 per cent) containing residues below the Action Level. No evidence was found of the use of banned synthetic steroids or clenbuterol. All other surveillance in 1996 took place under the non-statutory programme the results for which were generally reassuring. Particular attention was paid to residues of invermectin in salmon, malachite green in trout and dimetridazole in eggs and game birds and nicarbizin in eggs. In each area the VMD has worked closely with the industry and the retailers to identify the cause of the problem and the incidence of unacceptable residue concentrations has decreased significantly.

9.4 In all cases where residues above the Action Level are found, follow-up action is taken. In the case of red meat, the State Veterinary Service investigate on-farm and, in cases where malpractice is suspected, an officer of the Ministry of Agriculture Fisheries and Food's Investigation Branch may participate. The investigation involves an investigation of on-farm records of administration of veterinary medicines and of livestock and further samples are taken. If evidence of abuse is found, a prosecution follows. In respect of the non-statutory programme, legal action cannot be taken under the 1997 Regulations on any sample found to contain residues of veterinary medicines. The main follow-up action is done via the shops and supermarkets where the samples were collected. If the products were imported, the State Veterinary Service will contact the Chief Veterinary Officer in the country concerned.

9.5 The VMD believe that it is generally accepted that their programmes play a central role in ensuring that the consumer is protected against potentially harmful residues of veterinary medicines. The experience is that most producers, retailers and consumer representatives appreciate the assurance VMD results give and welcome the open way the surveillance programmes are carried out and detail with which the results are reported.

CHAPTER 10: GENETICALLY MODIFIED ORGANISMS (GMOS) IN THE FOOD CHAIN

Background

10.1 For many years the safety of novel foods including genetically modified (GM) foods was assessed on a voluntary basis by the independent Advisory Committee on Novel Foods and Processes (ACNFP). Since 1993 the marketing of GMOs has been controlled by Genetically Modified Organisms (Deliberate Release) Regulations 1992 which implement Directive 90/220 EEC. From 15 May 1997 the EC Novel Foods Regulation (258/97) introduced a mandatory pre-market approval system for novel foods.

Safety assessment of GM foods

10.2 In the UK the safety assessment of all novel foods, including GM foods, has been undertaken by the ACNFP since its formation in 1988. The ACNFP has operated a system based on a voluntary arrangement with the food industry which dates back to 1980. The 1990 Food Safety Act contained powers to put the ACNFP on a statutory basis. However, these were held in abeyance pending negotiations on an EC Novel Foods Regulation. The safety assessment focuses primarily on potential risks, but also takes into account consumer and ethical concerns.

The ACNFP

10.3 The ACNFP which consists of 14 members with expertise including molecular biology, toxicology and nutrition, and two lay members, a consumer representative and an ethical advisor, is very highly regarded at home and abroad by consumer groups and industry. The ACNFP's terms of reference are "to advise Health and Agriculture Ministers of Great Britain and the Heads of the Departments of Health and Social Services and Agriculture for Northern Ireland on any matters relating to the irradiation of food or to the manufacture of novel foods or foods produced by novel processes having regard where appropriate to the views of relevant expert bodies".

10.4 In 1991 the ACNFP published details of a decision tree based approach it had developed to assist in assessing the safety of novel foods. This approach, which was refined in 1994, uses techniques developed in the chemical industry to characterise potential hazards, through a series of linked questions, arising from failure of a component or alterations to a specific part of a chemical plant. The ACNFP's decision tree is used to identify the information requirements required for a particular type of novel food or process. Data provided by applicants is scrutinised in great detail by the Committee, and upon completion of their assessment, is deposited in the British Library where it is available for public scrutiny. The Committee's assessments have been published and are available separately or as part of the Committee's Annual Reports, both of which can be obtained free of charge from the ACNFP Secretariat. The ACNFP will continue to provide expert advice to the UK Government on the safety of novel foods and processes under the EC Regulation that came into effect earlier this year (see paragraphs 10.7 and 10.8 below).

Substantial Equivalence

10.5 The ACNFP's approach to assessing the safety of GM foods is based on the concept of substantial equivalence developed by the OECD and subsequently refined by the World Health Organisation. In 1990 an expert consultation organised by the FAO and WHO concluded that the use of genetic modification techniques "does not result in food which is inherently less safe than that produced by conventional means". The consultation also recognised the limitations of traditional toxicological test methods when applied to whole foods and recommended that a more structured approach to safety assessment should be developed. In 1991 the OECD proposed the concept of substantial equivalence.

10.6 Substantial equivalence is a comparative process in which a GM food is compared with a conventional counterpart. This comparison includes detailed analysis of the chemical and nutritional composition of the food, physical and agronomic characteristics of the crop and details of the genetic modification of the crop, including the stability of the modified line. Where a food can be shown to be substantially equivalent it is considered to be as safe as its counterpart and no further safety assessment is required. Where there are clearly defined differences between the GM food and its conventional counterpart the safety assessment should focus on those differences. Where a food is not substantially equivalent it does not mean that the food is unsafe. However, there would be a need for extensive toxicological, nutritional and compositional data to be provided before the product's safety can be fully assessed.

EC Novel Foods Regulation

10.7 From 15 May 1997, companies wishing to market a novel food in the EU have been required to submit an application to the competent authority in the Member State where they first intend to market their product. A key requirement of the regulation is that novel foods must not constitute a danger to the consumer. The UK competent authority is provided by MAFF and the Department of Health. Following acceptance of the application, the competent authority is required to complete an initial safety assessment and forward it to the Commission, within 90 days. The Commission then copies it to other Member States for their comments, which have to be made within 60 days. If the initial assessment is favourable and no objections are raised by other Member States, then the product can be marketed. If objections are raised, or if the initial Member State considers that an additional assessment is required, the application will be referred to the EC Standing Committee for Foodstuffs for final agreement, consulting the EC Scientific Committee for Food as necessary. If no agreement is reached there, the matter will be referred to the Council of Ministers.

10.8 Since the Novel Foods Regulation requires all Member States to consider the safety information provided by an applicant, it is essential that safety assessment procedures are common to all Member States. For this reason, the Commission asked its Scientific Committee for Food to prepare guidelines covering the information needed to support an application and the form in which it should be presented. In addition, the SCF produced guidelines on the way in which Member States should prepare an initial assessment report. These guidelines which were subsequently published by the Commission (Scientific Committee for Food 1997) are based on a decision tree approach that is very similar to the ACNFP's 1994 guidelines.

Labelling

Food Advisory Committee Guidelines

10.9 In the UK the labelling of GM foods is considered by the Food Advisory Committee (FAC). The FAC first issued labelling guidelines for GM foods in 1993 which took account of two public consultation exercises as well as the views contained in the Polkinghorne Committee report on the ethics of genetic modification and food use. These guidelines proposed that a GM food should be labelled if it:

(a) containes a copy gene originally derived from a human;

(b) contains a copy gene originally derived from an animal which is the subject of religious dietary restrictions; or

(c) is plant or microbial material containing a copy gene originally derived from an animal.

The FAC now uses the requirements of the EC Novel Foods Regulation as the basis for its decisions on the labelling of GM foods.

EC Novel Foods Regulation

10.10 The provisions in article 8 of the Regulation were deliberately drafted in such a way that the labelling of novel foods could be considered on a case by case basis. The Novel Foods Regulation requires special labelling when a food is judged, on the basis of a scientific assessment, not to be equivalent to an existing food. Foods will also require labelling if there are any health or ethical concerns or if they contain a genetically modified organism (GMO). The Government announced details of its policy on labelling GM foods in a news release issued on 7 June 1997. The UK is pressing for all foods which contain genetically modified ingredients to be clearly labelled so that consumers know what they are buying. In the case of refined products obtained from GM sources, such as oils, which contain no genetic material and are equivalent to existing food products, the UK accepts that labelling is not required.

10.11 As a result of the divergent labelling policies adopted by Member States, the European Commission announced its intention, on 25 July, to introduce a more coherent labelling policy for GMO products across the whole food chain. The Commission will be refining its labelling strategy in the autumn in consultation with interested parties including consumer organisations. The Commission's room for manoeuvre on labelling is constrained by the rules of the World Trade Organisation. It is generally recognised that attempts to require segregation of crops as a condition of approval would contravene these rules. However, it is likely that the final proposal will consist of three elements:

Voluntary labelling for certified GM free products

Mandatory labelling—

— "contains" for material known to be of GM origin

— "may contain" where the presence of GM material cannot be ruled out.

10.12 A further important consideration for consumers when deciding whether to purchase GM foods is an awareness of what the technology involves. MAFF has produced a Foodsense booklet on genetic modification and food and is also sponsoring a mobile exhibition entitled "Future Foods" organised by the Science Museum that will open on 20 November.

CHAPTER 11: FOOD IRRADIATION

Background

11.1 Since 1991 UK firms have, subject to a strict licensing system, been allowed to irradiate specific categories of food. So far it has been used in the United Kingdom only for herbs and spices. Future use of the process will depend upon the attitude of the general public. There are no current plans for more extensive use of irradiation in the UK.

11.2 Food irradiation has three main potential appliations:

— reducing the risk from food-borne disease

In particular, irradiation could help in the fight against Salmonella, Campylobacter and Listeria.

— reducing spoilage

Irradiation can be used to disinfest certain foods without the need to use chemical fumigants.

— reducing waste

Irradiation can slow down processes such as the sprouting of potatoes with the result that less food needs to be discarded.

UK legislation

11.3 The Food (Control of Irradiation) Regulations 1990 came into force on 1 January 1991, introducing a strict system of licensing for food irradiation plants. The controls cover all irradiated food from the processing plant to the supermarket shelf. The Regulations state that all irradiated food must be stored and transported with documentation which clearly shows that the food has been treated with ionising radiation, and the plant at which it was irradiated.

11.4 The Regulations also provide for regular inspection of premises, in particular to ensure that the correct dosage of radiation is being applied, and, as with any food process, that hygiene conditions are satisfactory and that good manufacturing practices are followed, including the provision of suitable training for employees. The Regulations also state that food must be of good microbiological quality before being irradiated. The Licensing Authority must be sure that all these conditions will be observed before it issues a licence to a company to irradiate food. To date only one operator has gained approval in the UK to irradiate a range of herbs and spices.

11.5 The Food (Control of Irradiation) Regulations 1990 also state that imports of irradiated food will only be allowed from those countries that have satisfied the Licensing Authority that their laws provide the same degree of consumer protection as those which apply in Great Britain. To date no licences have been granted for the import of irradiated food from any country.

European legislation

11.6 In December 1988 the European Commission published a proposal for a Council Directive on foods and food ingredients treated with ionising radiation. Unfortunately it has proved difficult to reach agreement on the range of foods to be approved for treatment and negotiation of the Directive has not yet been completed. However, our own Regulations closely follow the technical provisions of the proposed Directive which are already supported in the European Community. Political agreement on a Common Position text was reached at the Internal Market Council on 21 May 1997, and the text will now pass for formal adoption before going back to the European Parliament for a second reading.

Labelling

11.7 The Food Labelling Regulations 1996 require all foods, or listed ingredients of foods, which have been irradiated, to be labelled with the words "irradiated" or "treated with ionising radiation".

Surveillance

11.8 In 1996 MAFF, in collaboration with Trading Standards Departments, undertook a surveillance exercise to investigate whether undeclared irradiated foods were being sold through retail outlets and to the catering industry in the UK. Samples of herb and spice (307), prawn and shrimp (286), fruit and vegetable (81), chicken (69) and liquid egg (46) were collected. Overall 99.5 per cent of the foods in the survey were correctly labelled. Only 4 samples, all spice products, out of a total 789 were identified as being irradiated or containing irradiated components but not labelled as such. The enforcement authorities which took part in this survey have been informed of the results for the samples they collected so they can take any follow-up action considered necessary. Suppliers found to be trading unlabelled irradiated products have also been informed of their results so that they can implement corrective action.

Chapter 12: Animal Feedingstuffs

Legislation on the Composition and Labelling of Animal Feedingstuffs

12.1 The Agriculture Act 1970 requires that feedingstuffs when sold should be fit for their intended purpose and free from harmful ingredients. The Feeding Stuffs Regulations 1995 (made under the Act) implement a number of EU directives on the composition and labelling of feedingstuffs and feedingstuffs products.

12.2 Detailed provisions include a list of additives (eg trace elements, vitamins) permitted for use in animal feeds. This implements certain of the provisions of the Feed Additives Directive (70/524/EEC). Substances are included on the list only after an assessment by the EU Standing Committee on Animal Nutrition (which includes experts from Member States) and, in specific cases, an assessment by the European Commission's independent Scientific Committee on Animal Nutrition (SCAN). As part of the authorisation process the applicant must provide information to demonstrate safety, efficacy and the quality of the product. This takes into account implications for animal health, consumers of livestock products, people handling the product and the environment. These procedures are currently being extended to a new category of additive, enzymes and micro-organisms. A similar system applies to novel protein sources (eg amino acids).

12.3 The Regulations also cover labelling rules including arrangements for declaring certain nutritional information (eg protein, fibre) and ingredients (see para 12.5 to 12.9 on feed ingredient listing).

12.4 There are occasional cases of contaminated feed although most are not serious. One significant episode in 1989 involved imported maize pellets highly contaminated with lead. As a result of this case EU legislation, which already included maximum statutory levels for a range of contaminants in feeds, was further strengthened by amongst other things, the introduction of notification arrangements which alert Member States to consignments of contaminated feed.

Feed ingredient listing

12.5 The declaration of compound feed ingredients, either by specific name or category of ingredient, in descending order by weight, has been a compulsory requirement of EU law since 1991.

12.6 Most UK compounders originally chose to declare by category, primarily to allow greater flexibility in the choice of raw materials. There has, however, been a marked shift over the last year to full ingredient listing as a direct response to demands from farmers and others for more information.

12.7 A survey by UKASTA, the trade association which represents the vast majority of feed compounders, suggests that about 90 per cent of the animal feed manufactured by their members is now subject to declaration by specific ingredient. The remaining feeds are mostly specialised formulations, where manufacturers wish to protect research sensitive information from competitors. They are, however, generally willing to supply details orally to farmers on request.

12.8 Commission Directive 97/47, which comes into force in the UK shortly, will remove the category "land animal products" from those allowed for feed labelling purposes. This will require such animal material still permitted in compound feed to be identified separately. Directive 97/47 also introduces labelling statements for straight and compound feeds reflecting the EC ruminant protein ban and, in the UK, the mammalian meat and bonemeal (MBM) ban for livestock, farmed fish and equines (see para 12.13 on MBM below).

12.9 The latest development in Brussels is an anticipated Commission proposal for the complete removal of the option to declare by category. This will receive UK support.

Labelling of genetically modified animal feed

12.10 The labelling of viable genetically modified (GM) feed materials is now required under a recent amendment to Council Directive 90/220, on the Deliberate Release of GMOs. This came into force in the UK on 25 August 1997. There is, however, no current legislation setting out clear requirements for the labelling of non-viable (including processed feed) products. This will be covered in a Commission proposal for a Council Directive on "Specific" Feed Materials, which will regulate not only GM feed materials but also other novel feeds. We expect the Commission to submit a formal proposal to Council sometime this autumn. In the meantime the UK continues to operate a voluntary approval scheme, currently under review, involving dossier assessment by inter-departmental experts assisted by biotechnology expertise from the Advisory Committee on Novel Foods and Processes (ACNFP).

The Establishments and Inspections Directives

12.11 These two EC Directives are required to be implemented by April 1998. The Establishments Directive (95/69/EC) requires that premises manufacturing, selling or using certain feed additives must be approved or registered and comply with various quality assurance standards. The system will ensure that approved feed additives are produced and used with due regard to human and animal safety. The purpose of the Inspections Directive (95/53/EC) is to ensure a more even enforcement of legislation on animal feedingstuffs in the single market. The Directive sets out a framework by which this can be achieved at every stage with the emphasis on checks on products at origin and on entry into the Community.

Antibiotic growth promoters

12.12 Antibiotic growth promoters are a class of feed additive controlled under Directive 70/524/EEC. They act on bacteria present in the animal's gut and there is negligible absorption by the animal. Permitted antibiotics are listed in the Directive only after examination by SCAN and the agreement of member states in the Standing Committee for Animal Nutrition.

12.13 Some member states have raised concerns about the possible development of antibiotic resistance from the use of antibiotics in animal feed. This issue is considered in Chapter 5.

Mammalian meat and bonemeal (MBM): feed controls

12.14 It is clear that in most cases BSE in cattle has been caused by the consumption of feed containing mammalian MBM contaminated with the causal agent. The controls on feed have, therefore, been progressively tightened in the light of experience and the latest advice from the Spongiform Encephalopathy Advisory Committee (SEAC), the Government's independent advisor on BSE issues. In 1988 the feeding of ruminant protein to ruminants was prohibited. This prohibition was extended to cover all mammalian protein in ruminant feed in 1994. It was subsequently further extended in March 1996 to prohibit the feeding of mammalian MBM to all farmed livestock including fish and horses, to minimise any risk of cross-contamination of ruminant feed from other livestock feed. This approach has cut the number of suspected cases by more than 90 per cent since the peak in the winter of 1992–93. We expect less than 0.1 per cent of the UK herd to suffer the disease this year.

Use of Animal Material

12.15 Animal and fish derived products have been fed to livestock since before the Second World War. They have provided a valuable source of protein and were incorporated into compound feeds in association with plant protein. The feeding of all mammalian meat and bone meal to farmed livestock has now been banned (see para 12.13 on MBM). We are now required to implement EU legislation which would mean that pig slaughterhouse waste must be processed to prescribed standards. However, Ministers have reservations about this feeding practice and we are also considering whether such slaughterhouse waste, and waste from petfood plants, should continue to be fed at all to pigs.

Salmonella codes of practice

12.16 A series of detailed Codes of Practice for the control of *Salmonella* provide non-statutory guidelines for establishing good production practices and for safeguarding the microbiological quality of materials used. There are separate Codes for the animal by-products rendering industry; the fishmeal industry; during the storage, handling and transport; raw materials intended for incorporation, or direct use as, animal feedingstuffs; and in the production of final feed for livestock. These Codes were first published in 1989 and were revised in May 1995.

12.17 Codes of Practice for the prevention and control of *Salmonella* in poultry breeding flocks and hatcheries and in commercial egg laying flocks advise that feed should be supplied from a feed mill that is operating to the relevant *Salmonella* Codes of Practice and that is able to make available results of monitoring under the Codes.

12.18 These Codes, where appropriate, support the statutory requirements to sample processed animal protein used in feedingstuffs for livestock/poultry and to have it tested for *Salmonella* at a laboratory authorised by MAFF.

October 1997

Examination of Witnesses

MR RICHARD CARDEN, Head of Food Safety and Environment Directorate, Ministry of Agriculture, Fisheries and Food, MR GEOFFREY PODGER, Head of the Joint Food Safety and Standards Group, Ministry of Agriculture, Fisheries and Food and Department of Health, and DR EILEEN RUBERY, Head of Health Aspects of Environment Division, Department of Health, examined.

Chairman

1. Mr Carden, I take it you are leading today.
(*Mr Carden*) Yes, I am.

2. May first of all apologise for keeping you waiting; it is an occupational hazard of appearing before select committees, I am afraid. Could I invite you to introduce your team?
(*Mr Carden*) On my right is Dr Eileen Rubery from the Department of Health. She is Head of the Health Aspects of Environment Division there. On my left is Mr Geoffrey Podger, who is Head of the Food Safety and Standards Group, which we now call a Joint Food Safety and Standards Group because it includes both MAFF and Department of Health staff. I am the Head of MAFF's Food Safety and Environment Directorate.

3. I think you know this but perhaps before we begin the questioning proper it might be helpful if I set out just how we are conducting this inquiry into food safety, the scope of what we are trying to do this afternoon and the inquiry as a whole. You have seen the terms of reference of the inquiry and I must say here and now how very grateful we are to you and all those involved in the preparation of this very useful volume of evidence which you have presented to the Committee. We are genuinely appreciative of that and thank you for responding in such detail to those terms of reference. We want to concentrate initially really on the microbiological aspects of the issue and the scale of the problems; I think that is the right place to begin and this is where public concerns have been concentrated. You know this is going to be quite a long inquiry. We are not rushing to a report; that is not our intention at present unless something emerges. We want to be flexible in responding to what you do and what your Ministers tell you to do in respect of the White Paper and indeed the subsequent bill, which we expect to take account of in our inquiry. We also expect that we will probably want to dive off into one or two issues of detail which emerge as a result of sessions like this at a later stage. That could be a very wide range of issues. This is a very flexible inquiry indeed and it will develop as it goes along. We may be coming back to you or other bodies related to MAFF or Department of Health for further evidence, written or oral at a later stage. I have said already how grateful I am for the very comprehensive evidence which you provided us with. May I just ask a general question to begin with? Can you explain to us how the organisational changes have taken place both in MAFF and the Department of Health as the preparation for the eventual establishment of a Food Standards Agency? What has happened organisationally?
(*Mr Carden*) I shall be pleased to answer that. Just to pick up your complimentary remarks about our memorandum, let me say that in my experience this is many times longer than any memorandum I have seen put to a committee before. I hope that it is genuinely useful to you in what is clearly going to be quite a long and wide-ranging inquiry. Our Ministers made clear when they came into office that it was a very high priority for them to move towards a Food Standards Agency. Professor James delivered his report immediately after the election and within a week of the election that report was published and there was an announcement that the project would be pursued. It was quickly clear that it would take some time to achieve the setting up of an agency like that. It seems it will take something like two years. Ministers then decided and announced early on that they would be making organisational changes and policy changes on the food safety front in MAFF and in Department of Health to move things forward in the direction that the Agency will take matters and to make some of that progress in the meantime while the Agency is being prepared. We have had two steps of organisational change so far. At the beginning of July we made some changes within MAFF to the organisation of food safety work. The main change we made was to detach meat hygiene work from the Animal Health and Veterinary Group where it had traditionally been and attach it to the Food Safety and Standards Group. That was quite a significant change; it marked a new emphasis on the meat hygiene and veterinary work which has public safety as its main feature. That now sits in the Food Safety and Standards Group. The second step was taken at the beginning of September and that step involved bringing the staff from the Department of Health who deal with food safety into the same group, which is why I said at the beginning we now call it a Joint Group, because it is a conjunction of MAFF and Department of Health staff now all under the command of Geoffrey Podger in the Joint Food Safety and Standards Group. That move took effect at the beginning of September, a follow-through of

[**Chairman** *Cont*]

the first step. The staff working on meat hygiene, administrative and veterinary staff, who had been in the Animal Health Group, who had been stationed at Tolworth outside central London, moved on 10 October into London and are now co-located with their other colleagues in the Food Safety and Standards Group. That is the organisational change we have made.

4. What is the number of core MAFF staff currently in this Joint Food Safety and Standards Group?

(*Mr Carden*) There are 280 MAFF staff and 50 Department of Health staff in round terms; these figures change a little from week to week.

5. Roughly what proportion would that be of MAFF's total core staff?

(*Mr Carden*) We have something like 11,000 staff in MAFF in total, including agencies, which was why I was hesitating because your question related to core staff. I will have to give you the precise figure afterwards as I do not have it in my head. May we write to you afterwards?

6. Absolutely. Can you give us any indication at all how much of the Ministry's expenditure is accounted for by the policy programmes run by the Group?

(*Mr Carden*) The Group has expenditure of about £12 million on staff and staff-related costs; an £8 million budget for surveillance, which is a very important strand of the work and we will no doubt come back to that; £18-£19 million on research. Those are the main components of its budget.

7. Can we move on to the question of priorities? Your memorandum, inevitably because it responded to our terms of reference, covers the whole spectrum of food safety issues, virtually everything you can think of, every single issue from microbiological issues, pesticides, GMOs, irradiation, the lot. Can you give us an indication of what the most urgent priorities are for the Government for action?

(*Mr Carden*) I would want to draw a distinction between urgency and priority. Then I would want to say that we have a programme of action which is drawn up for any year not on a precise assessment of priorities. That is not really the way we approach our work programme. As you have pointed out, a large part of our memorandum deals with microbiological risks and a lesser part of our memorandum deals with a quite wide range of chemical risks. I would not want the Committee to take that as any sort of statement of priority. It is more a reflection of the complexity of the microbiological risks and the attention which it seemed the Committee would want to give to them. In the chemical risks section of that memorandum we have a variety of subjects, veterinary medicine, pesticides, irradiation, all of which are clearly important though we have dealt with them in quite a short space. That is not a question of priority. What we really aim to do in any year is to be giving attention on the policy side, in the surveillance and in the research parts of our activity to a very wide spread of food risks. We aim to include those which we assess as genuinely serious risks and topics in serious need of attention — there are quite a few points in the microbiological area of that kind at the moment; and topics on which there is strong public concern, as there quite often is over particular issues in pesticides and veterinary medicines, even if we may ourselves assess the risks to human health to be not particularly serious on some issues of that kind. Then we aim to maintain a capability and a degree of alertness in other areas, simply on the theory and experience that new hazards can come up unforeseen and you need to have a capability to be half way ready when something unexpected takes off.

8. I understand the dilemma you are in but I think that answer was that you do not have any priorities, it is all important. Is that right?

(*Mr Carden*) In a sense it is that we treat as of importance the topics on which we can see distinct indications of risk, topics on which there is strong public concern and other topics which we do not think we can afford to take our eye off for too long.

9. Can you sometimes risk being distracted from the real issues by irrational public concern on specific and topical issues?

(*Mr Carden*) I hope we are not and I hope that we do have sufficient resources to be giving an adequate amount of effort across the board.

10. What may be helpful to us—in writing if necessary and not now in public if you cannot do it at this stage—would be a breakdown of your expenditure on research and development and surveillance programmes.

(*Mr Carden*) What I could do for you, because I happen to have the figures with me, is to indicate quickly now the research budget we have and the main components of that. These are figures for MAFF's expenditure on research for 1997-98. The total research budget is £31.2 million, which breaks down into six main areas: microbiological risks, £3.7 million; chemical risks, £7.5 million; authenticity and applied nutrition, £7 million; pesticides, £8 million; veterinary medicines, £1.7 million and prevention of infection through food, £3.2 million. I should like to make a couple of comments on that. The figure for microbiological risk at £3.7 million may seem a little low, given the degree of attention we have given to it elsewhere. That is MAFF's expenditure on microbiological risks: a considerably larger amount is spent by other government departments, the Department of Health having an important component of it at £2.2 million. The total expenditure by all departments and research councils is probably around £10 million, so MAFF's is a minor contribution to that. Pesticides might seem strikingly large at £8 million; it is the largest of any of those components. That is a topic on which MAFF bears all the expenditure for the United Kingdom and other departments do not have any. The figure for veterinary medicines is similar and MAFF bears most of the expenditure. There is a little bit in Northern Ireland. You do need to look rather carefully at those figures before reading them as an index of priorities.

11. Would they also perhaps take account of the increase in private sector research in some of those areas as well? Would you take account of that?

(*Mr Carden*) There will be private sector research and we would take account of it.

[**Chairman** *Cont*]

12. The one thing perhaps it would be sensible to research is Northern Ireland. The most striking single thing about your memorandum and what we have heard before privately as a committee is these two sentences. Rates of food poisoning are markedly lower in Northern Ireland. The reason for this is unknown. That is it. The most interesting question about food safety is dismissed. May I invite you to speculate on the reasons?

(*Mr Carden*) Of course you can invite me. I do not think you will draw me very far into speculation. It would be extremely interesting to know and it might solve some of our problems if we could determine why, because the charts of the different pathogens depicted in our memorandum are striking. It strikes anyone that Northern Ireland seems consistently to have the lowest run. Scotland very often has the highest and that is also very interesting. It is just unclear what the reasons are. We can speculate that it may have something to do with lifestyle and the amount of eating out and the things that people eat. I was looking a day or two ago at the national food survey which has just been published which does suggest that as you go further north in Britain people eat more meat pies. That may have some association with the levels of *E. coli* and *Campylobacter* poisoning. It is genuinely unclear to everybody who has looked at it, including the Pennington Group. They looked at *E. coli* closely earlier this year and were very struck by the much higher rate in Scotland than in England and Wales: it was four times higher. They dismissed the question almost equally briefly by just saying that the reason is unclear.

13. Is any attempt being made to clarify it with additional research projects?

(*Mr Carden*) We certainly have research into all the pathogens but it does not at the moment throw light on these questions of why there are such sharply different incidences in different parts of the United Kingdom.

(*Mr Podger*) No, it is not at all clear how one could actually commission research in this area. We do have these results. Obviously a whole variety of people are continuing to try to work out what the links are but we genuinely do not know and we have to be honest in saying that.

Chairman: Try to find out.

Mr Todd

14. To get an idea of the scale of food poisoning in Britain it would be helpful if we had some idea of the economic costs of days lost and so on or the implications for the Health Service. Has any assessment been done of that?

(*Dr Rubery*) The economic effects are a very important area. They are rather complicated to deal with because they ramify into a large number of areas. There is the industrial, to the worker, effect, the effect on industry. There is the effect on the family and so on. There have been several studies done over the last few years. Perhaps the most useful one is one by Paul Sockett (formerly of the Public Health Laboratory Service) and Jenny Roberts at the London School of Hygiene and Tropical Medicine. They are a fairly reputable group of people. A paper of theirs was published in 1994 in the International Journal of Food Microbiology but it was actually based upon data collected in 1988-89. The data they collected was quite a while ago. They looked at about 1,500 cases of *Salmonella* food poisoning and then by using questionnaires tried to make some estimate of cost. Using that data they tried to extrapolate to figures for England. The sort of figure they came up to was for 1992, using 1992 prices, something like £70 million for the public sector costs, which would include the treatment and care costs in terms of the NHS but also local authority costs and a range of other public sector costs. They did also do some estimates of costs to industry and to the family which are in the paper. That is rather an old study but it is the most recent one we have. We have nearly completed a study called the infectious intestinal disease study, which is mentioned in our memorandum. This will actually give us a more up-to-date figure. One of the big parts of that study is to try to look exactly at this question. That whole study was designed to produce much more up-to-date figures on the costs, not just to the NHS but to industry, to the family and so on. That study is, we hope, going to be available by the end of this year, beginning of next year. Those will be the really useful, interesting figures, because unfortunately these earlier figures (of Sockett and Roberts) are rather out of date and therefore have to be treated with considerable caution.

15. Is there any evidence of how much other risks which we face in society cost us, road accidents for example, smoking—a topical subject today—to compare with that level of cost?

(*Dr Rubery*) Yes. I do not have those figures in my head but I should be very happy to get some comparable costs for you and send them back to you. I am sure we can find that.

16. The reason I am asking is exactly that. We face risk every day. If we smoke cigarettes, drink, cross the road, get into a car, we take a risk of some kind or another. To what extent is the risk of eating food greater or lesser than those?

(*Dr Rubery*) While one can transfer this into a figure in terms of financial costs, one has to be a little cautious about this. With the exception of *E. coli* 0157, most food poisoning is not fatal although people are ill for a period of time and it is unpleasant but they are not actually going to die, we are talking here by and large of large financial cost but not much cost in terms of human life. *E. coli* 0157 on the other hand is rather the reverse. There are not many cases. The actual financial cost is not so great. On the other hand, in terms of lives lost the cost is much greater. One has to take all these things into account.

17. Would it not be quite easy to put disproportionate levels of public expenditure into dealing with apparent risks in this area compared to much more substantial risks which bear much greater costs, both in terms of lives and public money?

(*Dr Rubery*) We do always have to try to make a judgement and we do try to do that within the Department of Health in terms of where we put resources. There is another factor which you do need to take into account and that is whether you have a handle on whether you can do something about an area. It is a combination of the three: the lives, the

[**Mr Todd** *Cont*]
morbidity, the actual cost to the community and also whether or not you know about an action you believe will be effective. The Northern Ireland example is one case in point. We do not have a handle on that so we are rather hamstrung in terms of doing anything. Once we get a handle on an area, as we did with *Listeria* where we found out that pâté was the cause, we were able to recommend that pâté should be pasteurised in pack and immediately the figures started to come down. You have those figures in our memorandum.

18. Where steps are reasonably easy to take and where it is obvious that they could be effective, that seems a tempting route to take.

(*Dr Rubery*) That is right; absolutely.

19. However, you are very aware of the risks of taking expensive measures which may have limited efficacy and also would then be passed on to the taxpayer or the consumer through either their tax bill or the cost of the food they eat.

(*Dr Rubery*) Yes, that is right. You have to make a judgement, taking all these different factors into account and public concern and public perception as well, which is also a very important point.

Mrs Organ

20. The question of how we are monitoring the economic cost of illness due to a food infection. Are we looking only at those in the working population, where somebody is going to their GP and has to have a sick note in order to have time off work, or are we looking and counting everybody who is going to a GP with a tummy bug?

(*Dr Rubery*) If we are looking at the infectious intestinal disease study, which is the one which I hope will give us the really useful definitive data, that is looking at cases of infectious intestinal disease, whether or not they go to the GP and whether or not they have a sample taken and whether or not they are off work. It is trying to get the whole of the triangle of cases. It is going down to those cases which do not require any treatment but actually just make you feel ill, right up to those where you end up in hospital seriously ill. There will be data on the economic costs for all of those.

21. If you are looking at every case which is reported, the problem may be when we are looking at the disparity between Northern Ireland and Scotland and the economic impacts for there as well, that it is because people in Northern Ireland are just not reporting it. We do not know whether the incidence is low *per se* in the population or whether it is lack of people coming forward and reporting it.

(*Dr Rubery*) This is one of the problems with reporting, as we said in our memorandum. With the routine reporting systems there is a problem about under-ascertainment. We know that the under-ascertainment is somewhere between ten and one hundredfold; it is quite significant. This is why interpretations of trends are difficult. The infectious intestinal disease project was set up on the advice of the Richmond Committee because they felt it would be very useful to get some really firm data which actually did give you some idea of the real incidence of all infectious intestinal disease. It will only be a snapshot; it will not give us trend data because we are just doing it for one period of time. It does give us some baseline to which we can extrapolate back other data to get some idea of what the extent of under-reporting of the different sorts of severe and non-severe illnesses is.

Mr Hayes

22. I want to press you a little on this question of empirical evidence and put it in an historic context, historical data rather than incidence of health problems as a result of food and the regional variations in that. How widely is that available? How much have you gone into it? My assertion to you is that this problem has always been there: it has not grown, it was not always well reported historically, it was not as well understood historically. There is little empirical evidence to suggest that it is a bigger problem today than it was 50 years ago so why are we planning to spend so much money on it?

(*Dr Rubery*) We certainly have figures on the different regional rates, so we can go down to regional levels if we want to. The reason I would say that the incidence of various infectious diseases has changed is that if one looks at the data then for example with *Salmonella enteriditis* there is no doubt that the numbers of those cases have gone up and the numbers of some of the other types of *Salmonella* have gone down. As the disease is pretty well indistinguishable, as far as we can tell, that is unlikely to be due to changes in reporting. It is more likely to be due to changes in the bugs which are actually making you ill. On the other hand, I would agree with you that whether there is an overall increase in the number of cases of *Salmonella* is open to discussion. We would tend to feel that the numbers of cases are genuinely going up, that the trend is that there has been some sort of an increase but the GP reporting system does not show that. It really depends on which reporting system you believe you want to put the greatest weight on. We would not dispute that there is plenty of room for argument about whether there is an overall increase in the number of cases of food poisoning. The data is difficult to interpret.

23. You talked earlier about the fact that there were not as many fatalities. There seems to me to be an ethical argument here and an economic one. If there are not many fatalities and there is not much empirical data, then there is less of an ethical argument for doing what you are suggesting in terms of allocating more resource and less of an economic one as well. That almost seems to be a self-defeating argument when you say there are fewer fatalities. More fatalities or potential fatalities in respect of other issues like smoking or whatever are a lot worse than a potential tummy upset.

(*Dr Rubery*) These are all points which one has to take into account. The economic cost of food poisoning is quite considerable: £70 million in a year is certainly a significant amount and it is something that we do know something about how to deal with. We do know that improving hygiene, trying to take one or two simple steps in kitchens and so on will help to improve things. Those sorts of messages must certainly be put out so that people are aware of how they can take things forward. When we identify that

[**Mr Hayes** *Cont*]

there is a simple mechanism for taking forward a way of improving the safety of food, such as pasteurisation of pâté, we obviously need to do that too. Then we need to keep alert to see whether we cannot find other handles upon the problem and try to improve the level of the quality of food all the way through the food chain. It is a question of judgement as to exactly how much resource you put into this area compared with others. There is a large number of other areas where the Department of Health and MAFF feel it is important to put resources and this is just one but it is an area which does have some remedial things which can be done and therefore it is important that one does not lose sight of it and that one keeps up the pressure.

(*Mr Carden*) Could I add one economic point, picking up something Mr Todd said? We should reckon that money spent on safer food is not all a dead cost. If it avoids food scares or stock recalls then it has a genuine pay-off for the food industry, apart from the pay-off in less time off work for employers generally. Many of the measures which have been recommended by our leading advisers on microbiological safety, the Advisory Committee on the Microbiological Safety of Food, are measures which they recommend the food industry to take or consumers to take which do not actually have a very high cost. Close attention to hygiene through the food chain and in the home could probably have a major impact on the number of food poisoning cases at really quite low cost.

Ms Jones

24. Is there actually any data to indicate what percentage of cases, in terms of food poisoning, is actually caused by people's lack of education in terms of how they store and cook their food?

(*Mr Carden*) There is no precise indication but Professor Georgala, the Chairman of the Advisory Committee on the Microbiological Safety of Food, has frequently said and gives it as his view in his memorandum to this Committee, that a very high proportion of food poisoning cases could be avoided, despite the level of infectivity coming through to the end of the food chain, if consumers or those who are serving the food in catering outlets took the standard precautions of following instructions on storing food properly, handling it properly in the kitchen, preserving separation between raw and cooked food.

25. Is there no attempt when people visit their GP or however we identify cases of food poisoning to establish the cause in terms of whether it is lack of education, in terms of how people have treated food or whether it is the storage of the food in terms of a commercial outlet? Is there no breakdown of figures in terms of how we identify where the food poisoning occurred?

(*Dr Rubery*) If a case of food poisoning goes to see the GP and he sends off a sample, that case should be notified. That is part of the notification system. If that happens, the purpose of the notification is that the environmental health officer should then visit the home and try to take samples, if that is still possible. The food may no longer be around. He should try to establish whether there was anything there which needs to be followed up. At the same time the environmental health officer will talk about food safety and how hygiene should be maintained in the home. There is an educative part of that notification process which would naturally go forward. General practitioners do know about food safety and they are kept up to date with information. They would naturally talk about safety to their patients.

26. Is no attempt made to collate that information nationally?

(*Dr Rubery*) The notifications are produced nationally. Where an environmental health officer identifies an outbreak that is often referred to the Public Health Laboratory Service and that produces our outbreak data which we have sent to you. The outbreak data does not by any means pick up all the outbreaks, it just picks up those which are notified to PHLS which will tend to be the more serious ones where they want information and help from PHLS. That would give you some information. The individual notifications are centrally collated and then they are published in the Public Health Laboratory Service's Journal so that everybody can see them. There is a central collation of data.

Ms Keeble

27. In collating the information do you actually have a breakdown on the age of the people who experience food poisoning?

(*Dr Rubery*) Yes.

28. I do not think you have actually provided that in your memorandum, have you? Would it be possible to have that?

(*Dr Rubery*) I am pretty sure the age is on the form. I shall certainly let you have the details on that.

29. The age also has some impact on the severity and what happens to the patient as well, does it not?

(*Dr Rubery*) Yes, it is the young and the elderly who tend to be the ones who cause problems.

30. It would be helpful to have a profile on that.

(*Dr Rubery*) Yes, I am sure we can let you have that.

31. Looking at what has happened to incidents of food-borne illness there is a fairly steady increase, certainly in some types of illness. Is this because of an actual increase in incidents or is it because of more careful reporting?

(*Dr Rubery*) This is very difficult to tell because there has been an increase in interest in food poisoning and we have actually taken quite a number of steps like writing to GPs or encouraging GPs to notify more frequently. From that point of view there are reasons why the increase could, to a certain extent, be artefactual. On the other hand, because the actual spectrum of microbes which are reported has changed, there is no doubt that the actual organisms have changed over the years. Some have gone up and others have gone down. This is the sort of thing which does tend to happen with microbes. You get something like epidemics of the organism, when they start to increase for a while and then for no apparent reason they just go down again.

[**Ms Keeble** *Cont*]

32. What causes that? Is it because there is some sort of change in the bugs about or is it partly because of changes in food production methods which will tend to encourage certain types of food-borne illnesses?

(*Mr Carden*) It is worth noting that the trend seems to be upwards in most western countries. It does not look like a situation unique to the United Kingdom: there is the same difficulty everywhere in trying to determine how far the apparent increase is real and how far it is an increase in notifications. It does appear to be moving the same way in most western countries. A number of explanations are offered for that trend in all countries but it may be to do with people not following the simple rules of hygiene as mentioned. It may be to do with the rise in eating out; it may be to do with the increasing complexity of the food chain which means that food arrives more highly processed and has gone through more risk points. There seem to be similarities across western countries in the types of pathogen on the increase: *Campylobacter* and *E. coli* increasing from a low base. For all the uncertainties which Dr Rubery has emphasised, it would be very difficult to conclude that food poisoning was actually on the retreat. It looks like the best working assumption that if it is not on the increase at least it is running fairly strongly and we need to keep up fairly sustained efforts, taking account of the economic points which have been made, to try to hold it in check.

33. You mentioned previously that there was a failure by people to observe quite simple rules about cooking food and storing food. Do you think that the increased publicity surrounding illnesses has led to more people reporting illnesses which we would tend to assume? If people are more aware of it then you would expect to a certain extent for them to use some of the simple rules which can help to avoid such illnesses.

(*Mr Carden*) There are two points there. There is one about notification. It may very well be that people tend to report more these days. The other point is whether people are following the standard guidance on handling food. The evidence on that does seem pretty disappointing. Government over the years and others outside government have issued really rather a large amount of guidance to people on fairly simple points which need to be followed to avoid food poisoning. The evidence which comes back from one survey after another—and there have been one or two published over the last few days—is that the level of awareness of this guidance is really not very good. We struggle a bit to know how to turn that round but MAFF and Department of Health are for instance going to run a food safety campaign at Christmas, the point of which will be to bring to people's attention at a time of year when a lot of people are eating in the home standard rules to follow to avoid post Christmas stomach ache. We have a budget of about £200,000 and the Minister of State in MAFF will be announcing that.

34. You did mention an increase of the risk points because of the longer food chain and because of food processing and so on. Can you just say, so that we also know what to look at, what the main risk points are? Is it on the farm? Is it in the food production? Is it in the cooking? Is it in external catering? Which, in your view, are the main risk points in the food chain?

(*Mr Carden*) There are risk points throughout the food chain from the farm through and different types of processed food carry different risks. There are risks with frozen food of breaks in the chill chain; the temperature rises at some point as the food is going through, which could cause bacteria to breed. There are different risks with vacuum packed food, which have been in the news in the last day or two. Vacuum packing avoids most of the bacterial risks but does carry a risk of botulism which can breed in a vacuum pack. There is a different sort of risk if the vacuum pack chain breaks. There are risks of cooked meats being contaminated by fresh meat. It is important guidance to consumers and to the butcher chain to maintain cooked and fresh meat, cooked and uncooked meat, separate at all points. One point to round this off is that we have from the government side been giving our attention more to the end of the manufacturing food chain and the consumer end of things and less to the farm end. There is a general realisation that it is important to pay attention to the level of infection on farms and to take some steps over that. *E. coli* brought that out.

35. You mentioned the under-reporting of food-borne illness was something like ten to one hundredfold. What would you think would be a more precise estimate?

(*Dr Rubery*) What we are hoping to do is get a feel for the extent of under-reporting from the infectious intestinal disease study because that will give us some idea of the actual numbers at one particular time. We can then link that with reported levels.

36. When will that report?

(*Dr Rubery*) We are hoping for the report from that at the end of this year or early next year probably.

37. The other thing is the variation in the way in which environment health officers undertake investigations. I think you are trying to draw up some standards on that. Could you comment on that?

(*Dr Rubery*) Yes. We do pay quite a lot of attention to environmental health officers and trying to help them have a uniform way of dealing with problems. They do have to be flexible because the problems are never quite the same so we cannot be too prescriptive. We do have a large number of codes of practice for environmental health officers which we draw up. There are 20 codes of practice on how they should apply the Food Safety Act for example. We have just amended a couple of them this year. As things change we do update them and after Pennington we have updated two of them to make them more appropriate post the recommendations in the Pennington report. We also have our own chief environmental health officer in the Department, Mr Ned Kingcott. He liaises with the environmental health officers across the country and arranges seminars for them so that they have some idea of the sorts of feelings, the general guidance, we would like to give. We do give them advice on handling outbreaks and particular problems. They can always phone us up if they have a particular concern or are not sure what they should be doing. We have a local

[**Ms Keeble** *Cont*]

authority liaison unit, which Mr Kingcott runs, which will put out advisory letters if we receive particular information which we think everybody need to know about. That provides another way of taking things forward. We also have a monthly safety food update, which is a newsletter which reports on particular problems which have been dealt with throughout the last month and gives them information on how they have been handled, sort of guidelines in case they need to use any of that information themselves. It gives them contact points for further information. We do quite a lot to try to make sure there is uniformity across the country. Where there are large organisations across the whole country we have what is called a home authority arrangement. Advice for a particular type of body which has a national set of units can get advice from one home authority and does not have to try to comply with individual changes or special guidance from different environmental health departments across the country so there is some uniformity across the country.

38. In terms of the investigations and data collection, whatever advice goes out, if the investigations are not done in a reasonably standard way and if the data is not collected in a reasonably standard way it must be very difficult to obtain an accurate picture of what is actually happening, must it not?

(*Dr Rubery*) The guidance we have in the Food Safety Act and the codes of practice is so that we do get the data collected in a standard way as far as we can. It is very difficult to make sure that there is absolute uniformity across the country but the best way is by establishing a culture and a central point of reference and then trying to encourage people to phone in if they have a problem. That is what we do.

Mrs Organ

39. As a result of your public health campaign over Christmas would you welcome generally a much better, clearer and informed information on foods as they are sold, such as chicken, bacon, frozen prawns, cheese, about where they should be stored, how they should be prepared and how they should be frozen and defrosted? When you look at the back of a packet of frozen prawns it is very difficult to work out exactly what you should be doing with it. I am sure there are many housewives over Christmas who will be taking frozen packages out, family does not turn up, they shove it back in the freezer, start all over again, take it out again, cook it up, freeze that meal back again, bring it out again. That is bound to happen. It may just be because people think they have it, they store it they do not know what to do with it. Would you welcome much clearer indication of how food should be stored and handled?

(*Mr Carden*) The underlying point is that we would certainly support any efforts to get the message across to people more clearly about how they should handle and store their food. I say the underlying point because I am not quite sure that I go along with you in thinking that it is the back of the package which is the best place to convey that information. There is a sort of tension over food labelling generally now. We have reached the point where the quantity of information on labels can be too large for people. There is anecdotal evidence that people—and you are rather supporting that—struggle to understand all the information on the items they pick up in the shops. It may be best to put the information across in another way: on the supermarket shelves or through magazines and leaflets. From the government side we put out a series of Food Sense leaflets, which we hope will be picked up; not simply read for themselves but picked up by those who write articles in magazines, in places where people would look for guidance about food and that the message gets through in that way. One has to use a combination of methods and not just rely on labels and packets to tell people everything.

Mr Hurst

40. Your very helpful submission shows that over the last ten-year period there is a 10-15 per cent incidence of *Salmonella* infection associated with foreign travel. Is there evidence that this trend is increasing or has it peaked with the rise of holidays abroad?

(*Dr Rubery*) We do obtain some information on which cases that are notified are due to travel abroad. The data does not suggest there is any particular underlying increase; the figures have gone up and down but there is no overall trend up or down. In a way that is slightly surprising, given that we do know a lot more people travel abroad. It may be a reflection of the fact that the quality of this data is not terribly good. It is the question of the under-reporting which we have been talking about before. We do not have any absolute evidence that the numbers of cases from abroad are going up.

41. It is very much the question of trying to track down the origin of the problem. It is very much anecdotal, is it not?

(*Dr Rubery*) Yes.

42. Somebody might say it was a dish of prawns, but on the other hand it could have been a leg of lamb.

(*Dr Rubery*) Yes. It is usually very difficult to identify the source unless you have an outbreak. If you just have one case then people can say they are sure it was the fish they ate last night but usually, if they have eaten the fish, you no longer have it to take a sample. By and large, if it is a single case it is very difficult to track down the source. It is only when you have a number of cases and they have all eaten the same food that you can attribute the outbreak to that source.

43. There is a major block in your collection of statistics and data for building up a picture of the origin of the problems, is there not?

(*Dr Rubery*) Yes; that is right. With people who have come back from abroad it is of course even more difficult. With Legionnaires' Disease, which is not a food-borne disease, because it is in a hotel we are often able to track that down. We have a very efficient system for doing that which is usually quite good but for food-borne outbreaks by and large because they go back across the whole of the country

[**Mr Hurst** *Cont*]

and food poisoning is much more common than Legionnaires' Disease, it is very difficult for us to identify an outbreak from a particular hotel.

44. May I move on to *Salmonella* in broiler flocks? There was a period of time when there was quite extensive destruction of the flocks in the earlier part of this decade. It does seem to have produced a decline in the incidents. Is that the conclusive answer? How many flocks were destroyed? Are there other factors we should be thinking about?

(*Mr Carden*) It does look to be the case that the level of *Salmonella* in broilers, in chickens in the shops, has come down. There seems to have been a steady downward trend over the last ten years or more. Government has taken a number of actions of which the compulsory slaughter of the early part of the 1990s was a major line of action, together with testing of flocks and the issuing of codes of practice for voluntary application by the industry. The policy of compulsory slaughter changed after 1993. There was a period from 1991 to 1993 when we compulsorily slaughtered the breeding flocks for broilers and the breeding flocks for layers but after a time, and on the advice of the Advisory Committee for the Microbiological Safety of Food, that policy was changed, relaxed, and slaughter became an option for the breeding flocks of broilers[1]; one of two options, the other one being dealing with *Salmonella* by antibiotics. I make that point because there is a run of figures which I have here for the number of flocks which were slaughtered but there was a break in the policy after 1993. The number of flocks slaughtered started in 1991 at 30, 1992 at 17, 1993 at 17, in 1994 it came down to 10 — but remember the policy had changed, in 1995 it was 12 and in 1996 it was three. The figures for those last three years are a little higher if you add in the other flocks which were dealt with by the other option. It does look as though that action had some effect. We did get advice in the middle of the period that compulsory slaughter had been applied rather more widely in the immediate wake of the last *Salmonella* crisis than looked to be cost effective and that is why it was relaxed.

45. Are there any other measures we should be considering at this stage? On the face of it the need for destruction is coming down but are there other things we ought to be doing?

(*Mr Carden*) We need to pay closer attention to eggs than to chickens. Whilst the trend of *Salmonella* in chickens at the retail point has come down quite markedly over the 1990s, between 1991 and 1995-96 when two surveys were carried out, the amount of *Salmonella* in eggs looks to have been pretty static at about one in 650. That is a minor part of the egg production but it is still a lot of eggs, given that we eat about 30 million eggs a day. It is rather curious that with the amount of action which has been taken by government and the industry on the egg front, there has not been much of a change in the position.

46. But there has been a rise, has there not, in the incidence of *Salmonella* in human beings over the very recent period? Would that be right?

(*Dr Rubery*) It is the same problem. Is it due to changes in ascertainment or is it real? I am afraid we would not wish to put our money on either. It is a difficult question. What one can say is that there is nothing to make one think it has gone down.

47. Is chicken consumption rising through the period or is it static?

(*Mr Carden*) It has risen a little; there has been some switching from red meat to chicken and with that some overall decline in meat eating so that chicken is now a slightly larger component of our meat diet than it was, taking the two together.

48. Meat as a whole but has it risen as a product in its own right during the period?

(*Mr Carden*) A little.

(*Dr Rubery*) A tiny bit.

49. Not significantly.

(*Mr Carden*) No, not in a major way.

(*Dr Rubery*) No.

Chairman

50. Can we link *Salmonella* and *Campylobacter*? Could you give us any details of your special emphasis programme on the reduction of these two? I think there are two projects currently under way.

(*Mr Carden*) Yes. It is slightly misleading the Committee to have used this term "special emphasis programme" which is a term we have only used this once and it is really just a label for a parcel of our research to which we are attaching special emphasis to deal with *Salmonella* and *Campylobacter*. There are two projects: one relates to *Salmonella* and one relates to *Campylobacter*. The *Salmonella* project consists of field studies to identify and evaluate intervention points for *Salmonella*: where one can intervene to best effect in the chain to tackle *Salmonella* on broiler production. That is a project being carried out, partly at our MAFF Veterinary Laboratory Agency, partly by the University of Bristol, over the next three years from this July at a cost of £200,000. We would hope to get some new ideas out of that on how to control the *Salmonella* at critical points. The other project is concerned with *Campylobacter* and its epidemiology, the course the disease takes in poultry and poultry meat and how to intervene on that to best effect. That again is being carried out partly by our Veterinary Laboratory Agency, partly by the Public Health Laboratory Service and the Royal Veterinary College over three years from this April at a cost of £250,000. It is slightly different from the other project in that it is partly designed to throw light on the way *Campylobacter* starts and the course it takes. It is a mark of our knowing quite a lot less about *Campylobacter* than we know about *Salmonella*. Although it is top of the league in the pathogen tables and quite a serious source of food poisoning, it is relatively recent on the scene of diseases and we do simply know less about it.

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[1] *Note by Witness:* In its Report on *Salmonella* in Eggs (1993), in the knowledge that controls on breeding flocks were fully operational, the Advisory Committee on the Microbiological Safety of Food (ACMSF) recommended that the Government review the continuing need for compulsory slaughter of laying flocks infected with *Salmonella enteritidis.* The ACMSF made no specific recommendation with regard to the slaughter of breeding flocks.

[**Chairman** *Cont*]

51. Looking specifically at the *Salmonella* work, do you think that work is going to help you meet the Advisory Committee on the Microbiological Safety of Food target for raw chicken below 10 per cent problems with *Salmonella*?

(*Mr Carden*) We hope it would make a contribution. The Advisory Committee themselves see a major contribution to be made by industry to get to that target.

52. Looking specifically at *Campylobacter*, in your evidence to us you said, "The ACMSF ... recognised that there was the need for further research to establish the prevalence of *Campylobacter* in poultry flocks and to investigate the origins of infection, transmission routes and potential mechanisms by which infection might be controlled". What I am not quite clear about from what you told us just now is whether it is research or simply pulling together research which is already available. Does it meet the ACMSF objective?

(*Mr Carden*) Those two bits of our special emphasis programme are new studies. There is quite a lot of other research on *Campylobacter* in progress part funded by MAFF. MAFF have spent £1.19 million over the last three years on a variety of studies into *Campylobacter*. The Department of Health have spent a little more, £1.86 million over the last three years. We have recently had the results of one study into *Campylobacter* which takes us a lot further forward but does show how rapidly *Campylobacter* can spread in chicken flocks and does seem to show how certain hygiene measures could be very effective against it if they were rigorously employed. That is a piece of research which we are now mulling over and wanting to work into commercial application. Does that answer your question? There is quite a range of work going on on *Campylobacter*, some results coming through, some studies going on over the next three years. It is an area to which we need to pay attention.

53. Absolutely. *Campylobacteriosis* appears to be mainly sporadic in nature, while *Salmonellosis* is associated with outbreaks. Does that tell us anything about the transmission methods of *Campylobacter*?

(*Dr Rubery*) Yes, it does. *Campylobacter* does not multiply on chicken carcases, whereas *Salmonella* can actually multiply on the chicken carcase therefore increasing the risk of infection giving rise to more individual cases. In addition we know that not all cases of *Campylobacter* are caused by food-borne means; there are other means as well. Actually when you are looking at *Campylobacter* you are not looking simply at a food-borne micro-organism, you are looking at something which can be collected by person to person spread and by water and probably other routes in the environment which we have not established. It is a more complicated picture and it is not all to be laid at the door of food.

Mr Todd

54. Has any research been done on international comparisons of the incidence of *Salmonella* and *Campylobacter* with this country? Are we seeing greater prevalence of this in our farms?

(*Dr Rubery*) What we do see is that if there is a trend up it seems generally to be going up in most countries. *Campylobacter* and *Salmonella* are the two big organisms which are problems in other countries too.

55. You gave some statistics about the proportion of our eggs which are found to have *Salmonella*. How does that compare with other countries?

(*Mr Carden*) May we let you have a note on that because we do not have the information with us?

Mr Hayes

56. Is it not the case that the Consumers' Association have done a study on this and found that the comparison actually suggests that Britain compares relatively badly on both *Salmonella* and *Campylobacter*? May I suggest that you have a look at that?

(*Mr Podger*) We in fact received the study today and have had a brief look at it. We were grateful to receive it. The United Kingdom does not actually come out worst in relation to *Campylobacter* but I agree that on the basis of these figures one cannot take that much consolation from them. As you will have gathered, we are very concerned about *Campylobacter*. It is fair to say equally, if one goes beyond this one Consumers' Association survey and looks at the general picture it is that everyone has a growing problem with *Campylobacter*. This is not a unique problem for the United Kingdom.

Chairman

57. You promised us a note on your assessment of this issue.

(*Mr Carden*) Yes, we did.

58. Thank you for that. Can we turn to the ACMSF itself? Your memorandum gave us a very helpful outline of the work and the Committee are very grateful for that. They have given us their own evidence as well, as you may be aware. I believe they have produced five reports on specific topics containing something like 120 recommendations. How do you put those into effect?

(*Mr Carden*) Government publishes a response to each of those reports setting out how it proposes to respond and attaches considerable importance to responding to these. We treat this as very authoritative advice. In all cases in their reports a high proportion of their recommendations have been to industry. I am not trying to evade an issue there but there have been some recommendations to government and then a quite considerably larger number to industry. Where the recommendations are to industry then government can encourage industry to respond but at the end of the day it is for industry to take the action or not. We monitor in house that the action promised in a government response has been taken. We monitor as best we can what effects the action has had but, as noted on *Salmonella*, it is clearer in some cases than others whether the lines of action recommended have had the desired effect. The ACMSF themselves are about to conduct a review of progress made against all their recommendations to

[**Chairman** *Cont*]

date and that in my view will be an important stocktaking and we will be very interested indeed to see what their view is; how they view the results of what they have been recommending over the last five or six years.

59. I was going to ask you for a note on what you thought they had done but presumably that document will be publicly available.

(*Mr Carden*) Their review will be made public as all their reports are.

60. Excellent. We had better ask them for a copy rather than you.

(*Mr Carden*) It is a review they are about to make so they could not let you have it yet.

61. Do you know what the timescale is?

(*Mr Carden*) I do not know.

62. You said that recommendations to industry were just for industry to worry about. Surely the Government also has a responsibility if the recommendations are important to make sure that industry takes notice of them.

(*Mr Carden*) I did not actually say they were just for industry. I think I said that at the end of the day it was for industry to have taken the action or not. We do try to add some encouragement and work out codes of practice, in many cases with industry, which then have a voluntary status and are for the industry to comply with or not. We are actively involved in trying to translate the ideas from the ACMSF into action even where it is for industry to take that action.

63. It would be interesting to see the work of this review and see what has actually happened; very interesting indeed. The Microbiological Food Surveillance Group coordinates the Government's microbiological food surveillance programme. You say in your evidence, "Recent examples include studies on cooked meats, *Salmonella* in eggs, and canneries". Are those three rather randomly drawn examples or are they essentially what they have done recently? The reason I ask is: are those priorities for the work of that Group or are they just examples?

(*Mr Podger*) Essentially the ACMSF have been looking at a series of issues of which that is the latest. It is not possible to conclude priority on the sequential order.

64. Other work is done as well.

(*Mr Podger*) Yes.

65. Are canned foods a significant source of food poisoning?

(*Mr Podger*) Canned foods are always a concern because of the danger of botulism which, though very rare, is fatal and is therefore a matter of serious concern. We have been fortunate that there has been no outbreak of botulism in this country since 1989. In fairness that did not relate to canned foods.

66. So the answer is that they are not.

(*Mr Podger*) The answer is that we are always worried about the potential problem. If faulty canning occurs and we get botulism, it is very serious. It has not mercifully been a problem in recent years.

Ms Jones

67. A recent report indicates that 44 per cent of general food poisoning outbreaks were associated with commercial catering premises such as canteens and restaurants. Could you detail for us the efforts which the Government is making in conjunction with local authorities to target the catering sector with advice and education on the prevention of poisoning their clientele?

(*Dr Rubery*) The environmental health officers in local authorities obviously have a particular interest in catering institutions because they are obviously an area where a lot of food is going through to a large number of people. We do produce leaflets which give advice to catering businesses on food safety, both on the legislation, which they obviously have to comply with and on the basis of which they will be inspected and also on best practice and guidelines and things like that. In terms of inspections by environmental health officers, we do have a system whereby the local authorities, on our advice, score the number of times they inspect related to the risks which are likely to be there. Catering establishments would tend to be inspected fairly frequently because they are obviously important because they are dealing with food all the time. We also have a poster which we send out which catering establishments can use which is called Assured Safe Catering and which deals with the HACCP system and identifies where the HACCP points are likely to be in general terms. This will be on the wall and can remind the kitchens about what they should be doing. We have an industry guide which was issued in 1995 and was revised this year; we keep it up to date. MAFF also put out something last week about the dangers of food allergies which are another thing of particular concern because peanut allergies and nut allergies can be fatal. This was to ensure appropriate labelling and warning to the public about those sorts of areas. You mentioned at the beginning the fact that we do know about quite a lot of outbreaks related to catering establishments. We are back into this problem of ascertainment. If a catering establishment has a problem with a particular item of food, it is quite likely to cause a fair number of people to be ill and it is quite likely that will be reported and that it would then be identified as an outbreak. However, if you have a similar problem in your home, it is quite likely you will be in bed for a couple of days but nobody else will know about it. It is not necessarily the case that because we know about so many catering establishments causing outbreaks that they are the major source in any way of food poisoning. It is just that they are more readily detected. We do then go in and deal with them and try to make sure we take steps and also pass on lessons learned from one catering establishment to others in the field so that there is education. That will be done through our environmental health officers networking and information going out. Catering areas are very important and we do keep a careful eye on them through the environmental health departments in the local authority.

68. Are there any specific initiatives to try to prevent the mishandling of food, perhaps in terms of staff training for instance?

[**Ms Jones** *Cont*]

(*Dr Rubery*) Yes, there are training programmes which environmental health departments do run for catering establishments, both simple level ones for new staff as they are recruited and also more sophisticated level ones for managers and for those who are actually running establishments. The establishments have to register with the local authority before they open; they would be inspected at that stage and would be told that the food handlers would need to be trained and that would be done before they were allowed to open[1]. There are ongoing initiatives of that sort.

Chairman: We will just change the running order slightly. There are two issues which we did not tell you we would ask about but I do not think they will hold any great fears or surprises for you: labelling and GMOs.

Ms Keeble

69. Just recently a lot of attention has been drawn to misleading food labelling with regard to nutritional standards of food. Do you see that there are particular issues relating to food safety and food labelling, perhaps in terms of additives, what might be in the food, but also the points about storage and preparation and handling, particularly given the fact that a lot of people now are buying part-cooked food? There are a lot of issues there around heating and cooking.

(*Mr Carden*) The first point is that labelling is not simply about nutrition, it can be about safety. Dr Rubery quoted an example of action by Government, by the Minister of State for MAFF, Mr Rooker, last week concerning allergies and foods which can provoke allergy. Part of his message was to food manufacturers to take greater care to flag those kinds of contents up on food. Labelling can be a question of safety. The second point is that the Government has made very clear that it is in general in favour of fuller information being given to consumers as a basis for choice or as a matter of safety. The Government is wanting to move in the direction of providing more information in house, so that we are now giving out more information with the results of our surveillance surveys, brand names starting last month and hygiene scores for slaughterhouses starting in the new year. On labelling the Government's position is to encourage clearer information to consumers, for instance on the GMO foods which you mentioned. There is a message to the Commission in Brussels to try to sharpen up the Community rules to which we operate on the labelling of GMO foods, which came out a bit cloudy from a negotiation about a year ago and which the Commission themselves see a need to clarify.

70. Do you think there are specific safety issues in relation to GMOs? There are ethical issues, consumer issues, people want to know.

(*Mr Carden*) There is a complex of issues and there can be questions of safety. I am hesitating because I do not think that the evidence available to us is that GMO foods carry a risk to health in many cases. There could be instances because of the technique which had been used. There was some concern over the GMO maize which was introduced on the market a year ago, that the process which had been used involved leaving an antibiotic resistant marker in the product which just might—might; scientists were fairly divided about it—carry a risk to health. That is an instance where there could be a risk to health. In the case of that product there probably was not; the consensus seems to be that there was not. There can be health issues and certainly clearly a strong feeling among consumers that they wish to know and to exercise choice over whether they are taking products of that kind. That is back to labelling and trying to get clear rules on what should be labelled and how.

71. Do you actually think that we know enough yet about the genetically modified organisms or is it that they are still quite new and we simply do not know?

(*Mr Carden*) It is a relatively new technology. On the other hand, the manufacturers and governments are taking the very best advice they can obtain on what is safe and there are quite strict rules, domestically and at the EU level, on what can be brought onto the market and what can be sown in the ground. It is all very carefully screened. If it proceeds, it proceeds on the basis of the best scientific advice we can get.

Mr Hayes

72. Just to pick up the point on public awareness, what are the main findings of the annual ONS Omnibus survey in relation to consumer knowledge? What measurement do we have, if any, speaking as empirically as possible, about consumer knowledge? What are the Government intending to do in hard terms, not in general principles, in terms of targets and timescales, to encourage better food safety advice to the public and the take-up of that advice?

(*Mr Carden*) I shall try to give a brief reply to that. The survey shows that people on the one hand show quite high awareness of warnings that the chief medical officer gives out. On the other hand, they do not have such a brilliant level of awareness of the instructions on storage of food and keeping things at the right temperature. They have a tendency not to follow instructions, even where they are clearly marked on packages and not to be all that careful about use-by dates and so on. There is a mixed message. That is a state of affairs which concerns us. We have done quite a lot over the years to send out clearer material and on the basis of this obviously we will need to continue to do that. There are particular projects afoot such as the Christmas food safety campaign. Those kinds of efforts need to be kept up.

73. In your judgement—and I accept the paradox you describe about chief medical officer and more local advice in terms of use-by dates, etcetera—if we could encourage a shorter food chain, if we could

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[1] *Note by Witness:* Food handlers in catering establishments are expected to be trained in hygienic awareness within four weeks of appointment and where appropriate, depending on the business, to receive formal training in food hygiene within three months of appointment. This is set out in guidance to the food industry on compliance with the Food Hygiene Regulations (1995) (Ref: "Industry Guide to Good Hygiene Practice: Catering Guide", an official guide to the Regulations which has been developed in accordance with Article 5 of the EC Directive on the hygiene of foodstuffs (93/43/EEC)).

[Mr Hayes *Cont*]
encourage the production, acquisition, storage, preparation and consumption of good quality raw materials, then we would move away from some of the hazards anyway. Is it not about diet promotion, promoting a certain type of lifestyle, a certain type of diet, rather than shutting the door after the horse has bolted?

(*Mr Carden*) I would not agree with that on the strength of what I have heard from the Chairman of the Advisory Committee on the Microbiological Safety of Food who would not say that the main risk to consumers comes from the length and complexity of the food chain. There are risks there but he does not tell us that is where the main risk is. He does tell us that a very high proportion of food poisoning cases could be prevented by the simple precautions which people are not taking often enough in the home. It seems to me on the strength of that, that it is money very well spent, £100,000 or £200,000 on a campaign to try to increase compliance with those sorts of household instructions, and questionable whether there is a basis for trying to push food manufacturing in a different direction.

74. I just want to come back on the food labelling issue. There is a related point in terms of public awareness and public confidence in food. Are you familiar with the code of practice which has been proposed by this cooperative of the Consumers' Association, the National Food Alliance and the Co-op, which they are asking government to adopt? Is government likely to adopt it?

(*Mr Podger*) It would be premature to say, to be honest. This is a very recent development. The general spirit of retailers and food producers making it clear beyond doubt what is in a product is very much welcomed by the Government. It is something we would certainly support. This actual initiative is a very recent one and obviously does need to be considered. Obviously one would need to talk to other parties.

Mr Todd

75. Turning to the Hazard Analysis and Critical Control Point system, you set out very helpfully how it operates in your memorandum. One can see how that can be applied in large businesses but not so readily in the smaller butcher's shop and so on. Can you set out how you see that working?

(*Mr Carden*) I rather think that there is a suspicion that there should not be, that it is difficult to apply HACCP full stop, difficult particularly to apply it in small businesses. The real position is HACCP can need to be quite complicated in a large operation where the process is complicated but can be really very simple in a small business which has a fairly straightforward operation. This is a leaflet which explains just how simple it can be which we would happily leave with the Committee. There are seven points to a HACCP process from beginning to end.

76. Are those the seven set out in paragraph 4.14 of your memorandum?

(*Mr Carden*) Yes, those are the seven points. If you were a caterer simply supplying burgers you would not need to do anything very complicated about each of those points. You would identify your hazards as being *Salmonella* and *E. coli*. Point (i). You would identify for point (ii) that you needed to cook your product properly. You would establish the limit with guidance from the chief medical officer on the temperature and the time you needed to cook a burger. You would use a thermometer and a timer to measure it. These are all quite simple points. May I just take a minute or two to illustrate that you do not need to struggle and it is not high tech? For point (v) you need to establish your corrective action. Your corrective action would be to cook it a bit longer if it had not got hot enough in the two minutes. To verify that your system was working properly, point (vi), you would need from time to time to check your thermometer and check your cooker. For point (vii), you would record that your operation had worked properly once a day or at some not very testing interval. That is what an expert would say you would need to do in a simple business. You do not need to write 50 pages of operations manual.

77. Good. Even with that you have missed out one or two things. I have never run a burger shop I am glad to say but if I were running one I would be worried about how long I was storing a product after cooking for example. What arrangements were being made for that. The packaging arrangements. How I was dealing with any cross-contamination in the process of that. There is a variety of other steps .

(*Mr Carden*) I was trying to simplify but those are valid thoughts.

78. Essentially you are saying the disciplines are relatively simple business standards.

(*Mr Carden*) Yes.

79. The training you provide so that people can understand those disciplines and how they apply to their business is straightforward.

(*Mr Carden*) Government has done quite a lot to get this message across; obviously not with total success so far. There are training courses funded by government for enforcement officers to put them in a position to give this sort of guidance to the smaller businesses. There is this free information produced by government.

80. Is the training provided on a personal basis or do you send someone a couple of leaflets and tell them to get on?

(*Mr Carden*) There are training courses which enforcement officers go on.

(*Dr Rubery*) The enforcement officer will be trained but also, when he goes to check that enforcement of the Food Safety Act in general is being carried out in any premise, he will obviously reinforce the HACCP principles to make sure that they are still taking place. If it is a new establishment he will help them to make a HACCP assessment.

81. There are elements which would appear subjective in some of this where people must make a judgement and ask themselves whether it is a risk or not.

(*Dr Rubery*) Yes, if necessary they would need to get in a consultant to help. With most simple premises they are the very simple things in terms of separation of cooked from raw meat, washing your

[**Mr Todd** *Cont*]

hands, making sure you use different implements, cooking to the right temperature, observing temperature control.

82. There is some evidence that *Campylobacter* is perhaps less well known in these businesses and may need a higher level of education to get across some of the risks involved.

(*Dr Rubery*) The principles are not very different because they are both killed by heating and *Campylobacter* does not multiply. So in a way, as long as you safeguard for *Salmonella* you will more or less pick up any of the safeguards you need for *Campylobacter* in most catering establishments.

83. You are satisfied on the whole that those who need to worry about it know about it.

(*Mr Carden*) No, we do need to take further measures and the Government announced a programme of expenditure in August this year of £19 million. The Minister of State at the Department of Health announced this expenditure targeted at small butchers particularly and that money to go partly on an increase in enforcement levels to help the introduction of the system, partly on training the butchers themselves in how to apply it.

84. Ms Keeble asked earlier about the analysis of the relative risks at the various stages of the food chain. The thing I would follow through on this would be, having done that sort of analysis how do you then allocate resources to deal with the various risks? Are the resources you are currently applying applied appropriately to the level of risk which you have identified?

(*Mr Carden*) Part of the answer is that a risk was identified by the *E. coli* outbreak last winter and the Pennington Group study of it in the small butcher area. It came out clearly that HACCP principles are not being applied as widely as they need to be in that sector. The Government has reacted by putting this programme in place to try to speed up the adoption of HACCP in that risk set of businesses.

85. The evidence is that when we look through the food chain there are various areas which appear, by the level of incidence of reported illness, to generate greater risk than others. We spent a little time talking about the home. Obviously restaurants and hotels have been identified as well. Is it correct that the resources of the Department in this area are proportionately allocated to the areas where we see the greatest risk in terms of incidents of outbreak?

(*Mr Carden*) Apart from the kind of pump priming expenditure which we are talking about in the case of small butchers I am not sure what kind of expenditure you see that departments ought to be engaging in. There is a legal requirement under 1995 legislation for those dealing towards the retail end of the food chain to apply HACCP principles. That is a legal requirement under the Food Safety General Food Hygiene Regulations 1995.

86. Presumably therefore it should be backed up by a greater incidence of visits for example.

(*Mr Carden*) Yes.

87. A higher level of training being made available. A substantial number of the incidents related to home outbreaks with people cooking their food incorrectly which would imply that that end of the food chain deserves a significant amount of resources. You have not given us the breakdown of exactly how you allocate resources within your Department so it is a little bit hard to tell whether these areas which seem to have the highest level of risk are actually getting the largest amount of resource.

(*Mr Carden*) In so far as we are talking about environmental health officers I need to turn to Dr Rubery because they fall under the Department of Health rather than MAFF.

(*Dr Rubery*) The problem in terms of identifying whether resources are adequate is that the Department in general will only be one part of the spectrum of people who are putting resources into the different areas. When we are dealing with the enforcement of the Food Safety Act a lot of the work goes on at the local authority end and therefore it is actually local authorities who are having to put resources in. We try to give a central steer in terms of activity, in terms of advice to members of the public on food safety but local authorities do quite a lot locally and health authorities do an amount in their health promotion clinics and so on in terms of taking forward advice to the public locally. It is a different view.

88. Your answer has perhaps illustrated the difficulties. Indeed your passing the ball to your colleague on this one indicates that there is no holistic view of the food chain and the various risks involved in it and the departments associated with enforcement and support for consumers, is there?

(*Dr Rubery*) May I try again? What I would say is that if one is looking at the food chain one needs to attack every point in the food chain because if any link fails, then there is a chance that there will be a problem further down. In public health terms one tries to attack every link rather than just one. If one link actually falls then another will save you from actually getting ill health at the end. The central department's view is that we look at all parts of the food chain; MAFF tend to concentrate on the farm end and we tend to concentrate on the human end but we do look at all points.

89. Let us test how that works in one concrete example. If we decided, as we have done, that poor quality abattoir practice has been a source of possible contaminations of food chain, we have instituted a variety of controls on the performance of abattoirs which have led to some of them closing, which has happened, and that has led to an increased number of animals travelling quite some considerable distance for slaughter, which it has, which has then led to poor quality animals reaching the abattoirs where they are eventually slaughtered. Now we have as one of the *E. coli* possible links, faecal contamination, which is certainly partly linked to that process. Do we not have a lack of coordination between the various points in the food chain which we have to care about to produce the outcome we want?

(*Mr Carden*) I hope that is not the case. May I make a point about organisation before saying a bit more about your question? Action at abattoirs is regulated by the Meat Hygiene Service, which is an executive agency of MAFF. We have a supervisory board which we call an ownership board which meets

[**Mr Todd** *Cont*]

every three months to discuss with the chief executive of that agency how his performance is going against targets and what his top priority operational problems are. I chair that board and Eileen Rubery is a member of it and that is one way in which we knit together the MAFF and Department of Health perspectives on meat hygiene work. That is a relatively new arrangement and has been the case now for about two years. We are making one step after another to try to organise ourselves tightly and make sure there is no real line between MAFF and Department of Health and meat hygiene is one instance. May I make a point or two about what you said over *E. coli* and dirty livestock? It was part reaction to the *E. coli* outbreak last winter that ministers urged the Meat Hygiene Service to take a tougher policy over admitting cattle in a dirty state to slaughterhouses. That policy was drawn up over the summer and brought into operation recently. It is intended as an important line of defence against *E. coli* getting into the meat chain. You are right that as a consequence of changes in the structure of the meat industry, although they have not been so very rapid, it can come about that animals have to be moved longer distances and moving animals longer distance can make them arrive at the abattoir in a dirty state. That is a problem which, with the stricter rule on admission to abattoirs, needs to be tackled and is being. Government is in discussion with industry about vehicle standards and measures which can be taken to try to turn that round. It is an issue which needs to be dealt with and we are thinking about it and discussing it with the industry.

90. It sounds as though that was not thought through at the time of the original setting of the framework for governing abattoirs.

(*Mr Carden*) It is the next step.

91. The next step which has occurred to people as a result of the outbreak of *E. coli* when someone said animals arrive with a lot of faecal contamination, to put it in a polite, scientific way.

(*Mr Carden*) It has been a point in the discussions whilst we have been drawing up the policy. I am resisting your saying it was not thought of.

Chairman

92. Talking about *E. coli* just puts a thought in our minds. With reference to the Scottish outbreak, do we know exactly what went wrong? If so, what are we doing to make sure everyone involved, producers and butchers, are informed about it to make sure it does not happen again?

(*Mr Podger*) The difficulty is that there is to be a Scottish fatal accident inquiry. However, that cannot take place until judicial proceedings against Mr Barr have ended. Whilst the first set has ended, there is a second set to be taken in the new year. Hence, for legal reasons, there cannot be any formal statement as to what happened. Clearly those who were involved in the outbreak have sought to feed through, not least to the Pennington inquiry, their views of issues which arose from that incident and action which is now being taken in response to Pennington reflects that. It would be wrong to suggest that the fact that we formally have to wait for the fatal accident inquiry has prevented us acting on the points which are believed to have come out of that incident.

Chairman: I will not push you on that as there may be *sub judice* implications there. That answer is helpful.

Mr Marsden

93. May I ask you about the potential for licensing of food businesses? Your memorandum talked about the various regulations applicable to food businesses and the Food Safety Act and European directives and so on. Despite that framework, it does seem to be relatively easy to establish and operate a food business. I know various witnesses to the inquiry are going to put forward the suggestion of licensing, including actually charging for such a licence. I wondered what the Government's views were on that.

(*Mr Podger*) The answer is that it is a very important issue. As you know, we do already actually have a licensing system in place for slaughterhouses, cutting plants and cold stores. In the fresh meat area this is operational. Moreover, as the Secretary of State for Scotland has announced in the Government's response to the Pennington report, the Government is going to put forward a proposed licensing system for butchers and that will be put forward for consultation. There is already action on this front. In determining how much further you go, you come back to exactly the kind of issues that Mr Todd was asking about in terms of what is the relative impact for the relative cost. It is a question of prioritisation and it is a question of looking at specific proposals on a case by case basis.

94. What you say about prioritisation is interesting. I should like to ask you some questions on chemicals and pesticides. Forgive me, I am not a chemist, I am not a scientist, I am a humble and simple member of parliament. Please forgive me and keep it very, very straightforward. On the prioritisation for setting limits for chemical contaminants in foods, has the thought process not been rather bizarre? May I give you an example? How is it that standards for nitrate in lettuce and spinach have taken precedence over the standards for mycotoxins, including aflatoxin B1?

(*Mr Carden*) There is some Community history behind that. The Commission has had power since 1993 to set limits on chemical contaminants in foodstuffs. The reason why they picked on nitrate in lettuce and spinach to start with was perhaps a characteristic Community reason: there was friction in the Single Market. The Germans, whose consumers are highly concerned about nitrates, were on the point of setting very low levels for their national market. The Dutch, who export quite a lot of lettuce—I do not know about spinach—to them, were at risk of finding their trade blocked and this issue was elevated to the Commission as one which they needed to tackle in order to set a harmonised limit to keep trade flowing within the Community. That is why that issue was taken first. Behind your question is presumably that it seems curious because there are much clearer risks from aflatoxin and you might expect on a risk assessment basis that that

[**Mr Marsden** *Cont*]
would have been the first substance the Community would have tackled. They are at least moving on to that as the second item, having resolved the nitrate in spinach and lettuce one. On the grounds of toxicity that seems a correct course.

Chairman

95. The priorities were set entirely with reference to the German consumers' environmental nitrates and nothing to do with food safety.

(*Mr Carden*) They set the agenda because they were concerned about food safety. They had a concern that anything more than very low levels of nitrate were a threat to their safety.

96. Is there any justification for that concern?

(*Mr Carden*) The level which was agreed on a Community basis was higher than the Germans had first thought of.

97. Is there any health risk associated with nitrate levels in lettuce that you are aware of, or is this German paranoia?

(*Mr Carden*) On the advice of our scientists, we are quite content with the levels which have been set and indeed think that levels a little higher than those set are safe enough. In this country we are operating an exemption, which is provided for in Community rules, for rather higher levels of nitrate to be allowed in winter lettuce grown here in the United Kingdom.

Chairman: I think I will take that as a no.

Mr Marsden

98. May I move on to the proposal on cadmium in foods? What do the available surveillance data tell us about whether there are problems in meeting the PTWI, the provisional tolerable weekly intakes for consumers?

(*Mr Carden*) The Commission are proposing limits on certain products. I do not know that we know yet exactly what level they are going to propose. There is an international limit set by the FAO and World Health Organisation, the provisional tolerable weekly intake, to which you have referred. The data I have indicate that the intakes of average United Kingdom consumers are well below those limits and even with intakes at the high end of the scale United Kingdom consumers are clearly still by a large margin below the PTWI which is around at the international level at the moment. Our United Kingdom levels of cadmium intake in short seem to be well inside the international level. We do not know what the Commission is going to propose as the Community level but they might take that as their starting point.

99. Are you saying the United Kingdom has tougher standards?

(*Mr Carden*) We do not have a national limit in force on cadmium. What I was quoting to you were the registered recorded levels of intake of United Kingdom consumers, which happen to be inside the international limit. We do not have a limit in force on the United Kingdom market for cadmium.

100. Are you planning to?

(*Mr Carden*) We are waiting now to see what comes from the Community discussions.

101. You will abide by what is set.

(*Mr Carden*) We will see what the Commission proposes, take scientific advice, take a view on that and negotiate accordingly.

102. The current system for assessing the safety of food additives, as we understand it, does not systematically deal with allergies and food intolerance. Does this situation require attention? Should the food intolerance working group actually include food additives within its remit?

(*Dr Rubery*) In fact it does. I looked in our memorandum and it is not very clear; I apologise for that. We have two working groups which are both sub-groups of the Committee on Toxicity. One of them is called the peanut allergy working group, which is looking at the acute effects of allergic problems. The other is the food intolerance working group. The food intolerance working group is in fact looking at additives as well as intolerance to food. They are both being looked at. They will be considering the information which is quite difficult to interpret on food intolerance, especially with regard to additives, but they are looking at that and will be giving us advice. I am sorry that was not clear.

103. To pesticides then. You will know of the concern amongst some consumer environmental groups about the long-term exposure to pesticides, including organophosphates. Does the acceptable daily intake, the ADI, for such pesticides take account of such possibilities regarding the long-term effect or is it just a snapshot?

(*Mr Carden*) Yes, it does take account of that. It is the level which is reckoned to be safe to be consumed over an individual's lifetime in the practical certainty that there will not be any ill effects. It is arrived at by tests, mainly on animals for obvious reasons, including some tests over the lifetime of those animals. As best it can it takes account of long-term as well as short-term effects with a wide safety margin.

104. A last question on veterinary medicines. You have explained about veterinary medicine residues in foods. When such residue levels were unacceptable, in particular in 1996, did they pose an actual risk to consumers?

(*Mr Carden*) I think we may have caused a bit of confusion in our memorandum.

Chairman

105. We are talking about salmon, trout and eggs.

(*Mr Carden*) There is a statutory system of surveillance for veterinary medicine residues which applies at the moment to red meat and will shortly apply to poultry. Then there is a non-statutory system which applies to other animal products. Salmon is one of those. That is a non-statutory scheme, funded by MAFF, surveillance to see whether any residues are coming through in that range of foodstuffs. There is no acceptable level of ivermectin in salmon for a technical reason that there is no maximum residue level which has been set for ivermectin in salmon. The reason for that is that nobody has applied to use ivermectin as a veterinary

[**Chairman** *Cont*]

medicine in salmon. We have not been asked to set a limit so there is not one. If therefore in the surveillance residues any ivermectin residue is found in salmon, that is unacceptable, it is outside the limit, there is no limit. Ivermectin traces were found through this non-statutory surveillance in a couple of years—1994 and 1995. No residues have been found in the surveillance in 1996 or in 1997 to date. It is not a distinction between when it was acceptable and when it was not. It is not acceptable. When it was found in 1994 and 1995, the levels were not acceptable and we had to take advice as to whether the levels which had been found were a threat to the consumers' health and the scientists at the Veterinary Medicines Directorate looked across at the residue levels which had been set. I think they took beef liver as the comparator. The residues which had been found in salmon were low in relation to that and the advice which came through to us was that there was no threat to health. They would not be acceptable another time.

Mr Marsden

106. What about others like nicarbizin in eggs and malachite green in trout and so on? There are clearly others there. Are you saying that the same applies to them?

(*Mr Carden*) I would have to look at each one of them to see exactly what the position was.

Chairman

107. Where there is no statutory limit the presumption is that it is zero.

(*Mr Carden*) Yes.

108. Not that there is no limit: the limit is actually zero.

(*Mr Carden*) Yes, the limit is zero. No limit means there should not be any traces. That does not mean you cannot use the substance to treat the animal or fish. It means that if you do you should make sure that there is no residue left. There are ways and means of doing that to make sure there is no residue left by the time the meat comes to market.

Ms Jones

109. You state that food irradiation could help in reducing the risk of microbiological food-borne diseases. If that is the case, should the Government be proactive in trying to address the concerns relating to this issue in regard to the public?

(*Mr Carden*) The answer is not yes or no. We are in the position where there is quite a lot of scientific advice that irradiation can be a powerful instrument for dealing for example with *E. coli*. I noted in the press last week that Professor Pennington was calling our attention to that and the United States seem quite close to allowing the application of irradiation for meat for the same reason. The position in this country is that we have had regulations since 1990 that permit irradiation of a fairly small specific range of foodstuffs and since 1990 only one operator has applied for and been given a licence to irradiate and that is for herbs and spices and the output is actually exported from this country. The Community is moving towards introducing some rules but only for a very limited range of foodstuffs. The reason why this Government and the last Government have not been proactive is that there seems to be very strong consumer resistance to the use of irradiation on food in this country. All the inquiries you make suggest that there is strong resistance among consumers in this country to irradiated food, therefore there does not seem to be much commercial interest and Government is accepting that position. I would suggest that if for example *E. coli* were to become a more serious problem in this country and there was more of a balance between the advantages that irradiation can have according to scientific advice and public concerns, the conditions would be there for more public discussion of whether irradiation should be more widely used.

110. Do you agree with the view that it can merely be used as a means to camouflage undesirable hygiene practices in the food industry?

(*Mr Carden*) In that it can combat pathogens, however they have got there, I suppose you could take the view that it could cloak unhygienic practices along with dealing with pathogens that are difficult to deal with by any other practices.

111. I was going to ask how extensively irradiation took place, but you have answered that: it would appear to be extremely limited.

(*Mr Carden*) A bit small; yes.

112. Is irradiated food actually imported into Britain?

(*Mr Carden*) Not as far as we can tell. There is some surveillance and it has not picked up any.

(*Dr Rubery*) Yes, that is right.

113. Are there any regulations to prevent it?

(*Mr Podger*) There was a small instance picked up of an import which was in fact herbs and spices which are commonly irradiated, sometimes in the Netherlands, and which is beneficial in food safety terms, as we are advised. It was discovered that had actually turned up in this country when it should not have done. The general outcome of looking at this area has been not to find any significant degree of irradiated food which is not so described.

114. To go back to labelling, if there was a more extensive use of irradiation, would you be of the view that the products which have been irradiated must be labelled to say so.

(*Mr Carden*) Yes, it would be thoroughly in line with the views which our ministers take on labelling that consumers should have information if that were being done.

Mr Hayes

115. We have obviously talked about nutrition and health a great deal today. We are aware that the Food Standards Agency may well take on issues of nutrition, diet and health. We will wait to see the White Paper and what that delivers. Turning briefly to one example of this, probably one you might have expected us to turn to, the COMA report on the possible link between red meat and cancer, what went wrong there in the arrangements for coordination

[**Mr Hayes** *Cont*]
between MAFF and the Department of Health? When will COMA's final report be published? Will it take account of the existing research which has contradicted the basis of the advice to reduce red meat consumption?

(*Mr Podger*) Absolutely nothing went wrong in coordination between MAFF and the Department of Health, which is fortunate as I am employed by both of them. The difficulty was simply that an administrative mistake was made over the holiday period and it was not recognised until too late that in fact not every member had actually had the opportunity to comment in full on the final text. As everyone who has serviced committees will know, that is actually a complete disaster. Not unnaturally at that point it was necessary to provide more time in order that that process could properly take place. That is what went wrong. It was not a failure of coordination between MAFF and the Department of Health. We hope the report will actually appear by the end of the year; that is the sort of timetable for it. Final text is being agreed as we speak. The report is a very thorough study of all the work up to date, which includes published and refereed studies. Frankly, whatever particular conclusion people actually take on this matter, they will find very clearly laid out the evidence and the basis on which COMA has reached its views.

116. There is quite a lot of academic advice now in terms of the relationship between cancer, particularly stomach cancer, and diet. I acknowledge that and particularly the beneficial effects of fruit and vegetable consumption. What I am really getting at here is the danger when the Food Standards Agency remit comes into existence of making this sort of mistake. By that I mean, when it strays into areas of nutrition, it will be straying into areas where there is considerable difference of opinion between academics and may well undermine the credibility with the public if it gives advice which is subsequently seen to have been inaccurate. I could go on about "Go to work on an egg", "Don't go to work on an egg" and all sorts of other things going back over 30 years. Would it not be better for the Food Standards Agency to stay out of these stormy waters in order to maintain its public credibility?

(*Mr Carden*) I think we ought to stay out of these stormy waters because the Government's position will shortly be made clear in a White Paper which will then go out for comment and the debate will continue. I should not like us to respond to that one.

Chairman: I accept that.

Mr Todd

117. Do you think the public believes scientists in this area?

(*Mr Carden*) I would say that this is an area of policy where the advice to governments comes from outside, from scientists across the range of food safety and animal health problems as well. We have specialist committees of the best assembly of scientists topic by topic which ministers have been able to put together to give authoritative advice. Ministers in my experience place a great deal of weight on the advice which comes from those committees. We are in a period when the authority of that advice with the public has been pretty severely tested. Perhaps the answer to your question is, no. In my view to resolve these questions of food safety one really does need to go to the scientific experts and there is a problem to solve about how to rebuild public credibility.

118. I am sure I am not alone in talking to my constituents and hearing from them that they hear one scientist saying one thing and another another, they do not know what to believe, the best thing to do is to follow common sense, that certainly any scientist being quoted by a politician is probably doubly to be suspected.

(*Mr Carden*) I am not sure that is a view you would actually urge on ministers. Ministers do see themselves as having a responsibility for protecting the public. On many of the questions they deal with it is very difficult to see what firm ground there is except the best scientific advice that you can find, from an assembly of scientists because they have different views.

119. It is a serious point. If we are going to deal with food safety and rely on science, we do have to persuade the members of the public who are the consumers of food that the advice we give is worth listening to. We had an earlier discussion over the whole issue of consumer communication and how we persuade people to do things. One of the big problems is that experts are not believed.

(*Mr Carden*) There is a serious issue there and in the longer term it is one which the Food Standards Agency is going to have to pick up. In the shorter term there are several steps which we are taking, one of which is setting up a risk communication unit inside the Joint Food Safety and Standards Group. We are setting up a risk communication unit. We advertised about two weeks ago for the head of that unit and that is an attempt to try to raise the level of public understanding of risks in the food safety area and an attempt to project the message about risks better than perhaps has been done in the past.

Chairman: This is a fascinating area of debate. It is probably one we ought to push with the politicians rather than the officials. I do hope you will make sure your ministers saw the very fine editorial in yesterday's Financial Times on this subject. I think that we must draw things to a conclusions there. Thank you very much indeed for speaking to us so freely and interestingly. We are very grateful to you.

Supplementary Memorandum submitted by the Ministry of Agriculture, Fisheries and Food, the Department of Health, Scottish Office, Welsh Office and Northern Ireland Office (C73)

INTRODUCTION

1. During the evidence session with officials on 11 November, the Committee requested that certain additional information be forwarded to it in writing at a later date. This supplementary memorandum fulfils that request.

CORE-MAFF STAFF IN JOINT FOOD SAFETY AND STANDARDS GROUP

2. The Committee asked what proportion of core-MAFF staff were currently employed within the Joint Food Safety and Standards Group. Numbers vary from day to day, but on 31 October 1997 there were 285 core-MAFF staff employed within the Group. This figure represents just over 4 per cent of total core-MAFF staff of around 6,730 (including casuals), or some 2.6 per cent of the total MAFF staff of around 10,800 (including those working in the Ministry's executive Agencies).

ECONOMIC COSTS OF OTHER HEALTH RISKS

3. To put the economic costs of food poisoning in context, the Committee requested information on the economic costs of other health risks, such as smoking and road accidents.

4. Figures are available for the economic costs of smoking[1] and road accidents[2]. However, although these provide an indication of the magnitude of economic costs they are not directly comparable as they are calculated on a different basis.

SMOKING RELATED DISEASE

5. Recent estimates of the cost of smoking related disease to the NHS in England are £1,400 million or £1,700 million depending on the method used to estimate the costs.

6. For a typical Health Authority with a population of 500,000 the cost of smoking related disease would be approximately £14 million based on £2.5 million for GP visits, £1.5 million for prescriptions, £3.2 million for inpatient stays, £1.9 million for day cases, and £4.9 million for outpatient visits. These figures do not include costs associated with harm to the unborn child or costs associated with children living in smoking households. Costs associated with the latter have been estimated at more than £1.3 million per year for a typical health authority in England[3]. These figures do not include costs associated with lost productivity or human costs associated with illness and loss of life due to smoking related disease.

ROAD ACCIDENTS

7. In 1996, 3,274 fatal accidents, 37,302 serious accidents and 195,363 slight accidents involving injury were reported[2]. Of the casualty related costs associated with these accidents, the medical and ambulance costs were estimated to be £490 million. Additional casualty related costs including lost output and human costs were estimated to be £8,890 million.

REFERENCES

[1] *Cost effectiveness of Smoking Cessation Interventions*, Centre for Health Economics, University of York and Health Education Authority, October 1997.

[2] *1996 valuation of the benefits of prevention of road accidents and casualties*. Department of the Environment, Transport and the Regions. Highways Economics Note No. 1. August 1997, 10pp.

[3] Godfrey C, Raw M, Sutton M, Edwards H. *The Smoking Epidemic. A prescription for change.* Health Education Authority, 1993.

BREAKDOWN OF NATIONAL FOOD POISONING NOTIFICATION STATISTICS BY PATIENTS' AGE

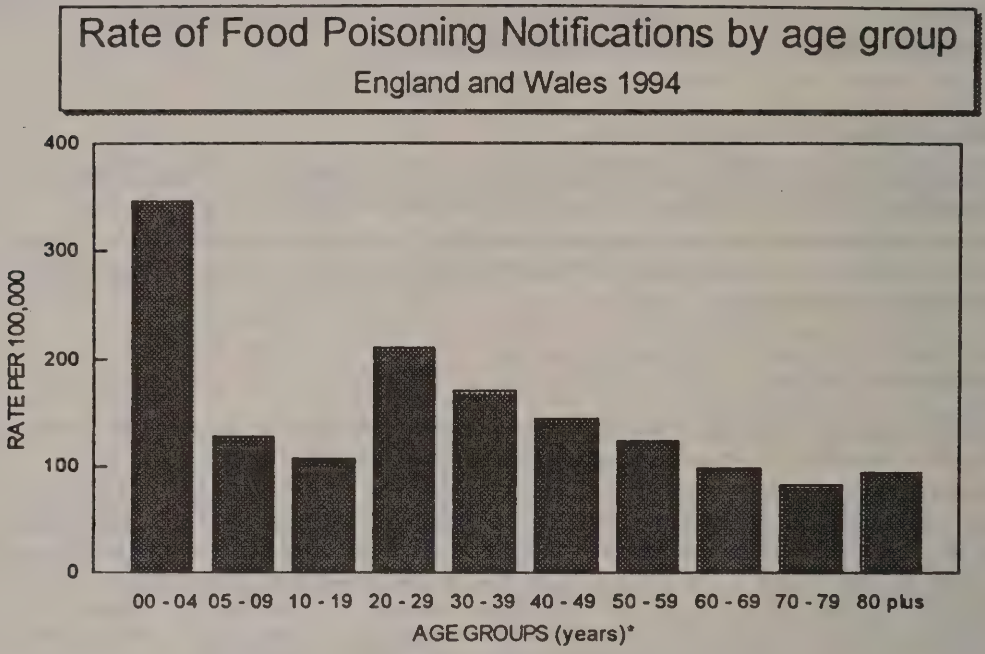
8. The Committee wished to see a breakdown of national food poisoning notification statistics by patients' age.

9. This information is available for England and Wales and Scotland but is not collected in Northern Ireland. Figures 1 and 2 show the rates for food poisoning notifications in 1994 by age group for England and Wales and for Scotland respectively. The highest rate occurs in the age group 0-4 years with 347 per 100,000 population in England and Wales and 385 per 100,000 population in Scotland. Notification rates are much lower for other age groups and steadily decline for age groups older than 20-29 years in England and Wales and 25-34 years in Scotland. The lowest rates occur in the elderly age groups. Notification rates for all ages in England and Wales and in Scotland in 1994 were 159 and 162 per 100,000 population respectively.

10. There are many possible reasons for the observed difference in rates between age groups for example, parents may be more likely to seek a GP consultation for a baby who is unwell. The study of Infectious Intestinal Disease (IID) in England will provide detailed information on age specific rates of IID as well as those for specific organisms including *Salmonella* and *Campylobacter*.

Figure 1

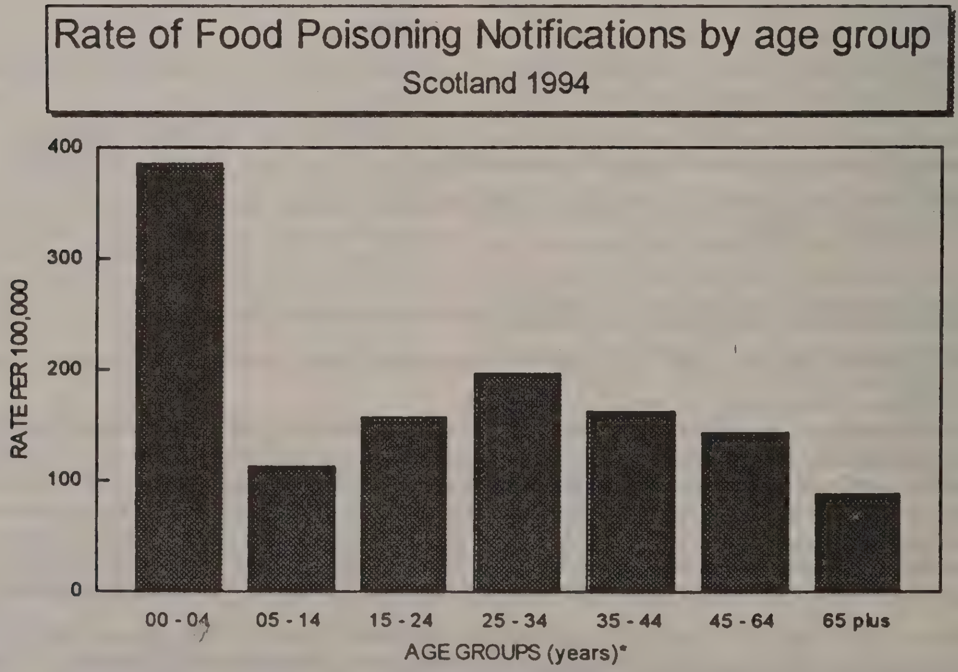
FOOD POISONING NOTIFICATIONS ENGLAND AND WALES 1994 BY AGE GROUPS



*Age unknown accounted for 3,049 cases of food poisoning in England and Wales in 1994

Figure 2

FOOD POISONING NOTIFICATIONS SCOTLAND 1994 BY AGE GROUPS



*Age unknown accounted for 106 cases of food poisoning in Scotland in 1994

INCIDENCE OF CAMPYLOBACTER OUTSIDE THE UK

11. The Committee enquired how the *Campylobacter* situation in the UK compared with that in other countries, and drew attention to the data from a EU-funded survey which the Consumers' Association quoted in its Memorandum of Written Evidence to the Committee.

12. As part of its comprehensive Report to Government in 1996 on Poultry Meat, the Advisory Committee on the Microbiological Safety of Food (ACMSF) reviewed available information on *Campylobacter* contamination rates for poultry meat in various countries, including the report referred to by the Consumers' Association. What was clear was that *Campylobacter* is not just a UK problem, but is a problem for poultry meat production around the world.

13. Specifically in relation to the EU study, the ACMSF concluded that, because of differences in the sampling and microbiological methods used, it was difficult to compare the findings with other surveillance studies undertaken in the UK. The relevant extract from ACMSF Poultry Meat Report is attached as an annex. In addition to the uncertainties over lack of consistency of methods of sampling and analysis, it is important to note that the sample sizes were small and that some of the samples taken at retail in the UK were imported from other countries.

14. The Government takes very seriously the task of improving the position. To this end, there is a significant programme of research and surveillance work on *Campylobacter* infection, mainly directed towards poultry. On-going studies include work on competitive exclusion and vaccine development against *Campylobacter jejuni* in chickens. Much of the work being undertaken is in direct response to recommendations made by the ACMSF in its Report on Poultry Meat and its Interim Report on *Campylobacter*. A review meeting to consider *Campylobacter* research and surveillance programmes was held in November 1996 and the assessment and management of the risks and hazards from *Campylobacter* form part of a Government special emphasis programme. In addition, steps are in hand to address the question of developing a UK-wide sub-typing method for *Campylobacter* which ACMSF has identified as a priority task.

15. The Department of Health proposes to undertake a further surveillance study of *Campylobacter* in chickens on retail sale in 1998.

SALMONELLA IN EGGS IN OTHER COUNTRIES

16. Finally, the Committee asked about the prevalence of *Salmonella* in eggs in other countries. To recap, the Government's original memorandum of evidence reported that some one in 600 (about 0.17 per cent) of UK-produced eggs on retail sale in 1991, and a similar proportion in 1995–96, were contaminated with *Salmonella* (paragraph 5.14).

17. Council Directive 92/17/EEC requires Member States to include information on *Salmonella* in annual reports on trends in and sources of zoonotic agents in animals, feedingstuffs, food and man. Data from the 1995 report is shown in Table 1 below. Not all countries provided data on *Salmonella* in eggs, but among those which did, the rate of salmonella was not dissimilar to that found in the UK. However, direct comparisons should not be made because of differences in sampling and analysis.

Table 1

EU MEMBER STATE TESTING FOR *SALMONELLA* IN SHELL EGGS—1995

Member State	*Organism*	*Number of samples tested*	*Number of samples positive*	*per cent positive*
Austria	*S. enteritidis*	2,454	15	0.61
Belgium	*Salmonella* spp.	Not shown	8	Not shown
Denmark	*Salmonella* spp.	14,800	Not shown*	0.10
Germany	*Salmonella* spp.	16,410	205	1.25
Greece	*Salmonella* spp.	199	0	0
Luxembourg	*Salmonella* spp.	192	0	0
Portugal	*Salmonella* spp.	9	0	0
Spain	*Salmonella* spp.	30	0	0

*Derived number positive = 15.

France, Ireland and the Netherlands provided no data on shell eggs, only on egg products.

Finland, Italy and Sweden provided no data of any description on eggs.

11 December 1997

Annex

Extract from the ACMSF Report on Poultry Meat

Campylobacter

2.13 Raw poultry is frequently contaminated with *Campylobacter* spp and surveys undertaken in various countries suggest that contamination rates vary widely, ranging from 0 to 100 per cent.[1,6,10,11] In the UK, Hood *et al*[12] isolated *Campylobacter jejuni* from 48 per cent of 46 fresh chickens, all of 12 uneviscerated (New York dressed) chickens, but only one of 24 frozen chickens. Other types of poultry can also be contaminated by *Campylobacter*, Simmons & Gibbs[13] reporting that *Campylobacter jejuni* was isolated from 11 out of 12 turkeys following processing and before sale.

2.14 In Northern Ireland the chilled and frozen chickens purchased for the SGMSF *Salmonella* survey were also tested for *Campylobacter* spp. *Campylobacter* was isolated from 94 per cent of 63 fresh chickens and 77 per cent of 44 frozen chickens with 69 per cent of isolates being *C. jejuni,* 30 per cent *C. coli* and 1 per cent *C. lari.*[14] Also in Northern Ireland, Flynn *et al*[15] examined 153 chicken wings on retail sale and found that 65 per cent were positive for *C. jejuni/C. coli.* The high isolation rate of *Campylobacter* from poultry in Northern Ireland is in marked contrast to the low isolation rate of *Salmonella* (para 2.9).

2.15 The 1994 EC survey involving consumers' associations[6] also looked at the prevalence of *Campylobacter* on retail chicken in EU Member States and in Norway and Slovenia. Across Europe 1,707 samples were examined with the overall prevalence of *Campylobacter* being 28 per cent and ranging from 0 per cent in Greece and 1 per cent in Norway, to 53 per cent in France and 60 per cent in Portugal. In terms of retail poultry meat in the UK, the overall prevalence of *Campylobacter* was 41 per cent for all chicken on retail sale and 44 per cent when only UK-produced chicken was considered. Because of differences in the sampling and microbiological methods it is difficult to compare these findings with other surveillance studies undertaken in the UK. However, the results from the EU study and the surveys undertaken in Northern Ireland point to a significant level of contamination with *Campylobacter* in UK-produced chicken at retail. Contamination may not be limited to chicken. In the Netherlands, *Campylobacter* has also been isolated from other types of poultry including turkey, domestic duck, pheasant and guinea-fowl.[16]

2.16 As with *Salmonella,* most surveys of campylobacters have determined presence or absence in a food rather than attempting enumeration. However, a number of authors have reported counts of *Campylobacter* on poultry, in some cases at high levels.[12,14,17,18] Hood *et al*[12] found that viable counts of *C. jejuni* on fresh chicken varied widely, ranging from 1.5×10^3 to 1.5×10^6 per carcass. *Campylobacter* was isolated from breast, wings, thighs and vent cavities indicating a general distribution of contamination over the carcasses. However, campylobacters may not always be present in high numbers since Izat *et al*[19] reported levels of less than 75 organisms per carcass during a study conducted in the USA. In Japan, Tokumaru *et al*[17] reported lower numbers of salmonellas than campylobacters in a survey of chicken meat from slaughterhouses, processing plants and shops. The presence of high numbers of campylobacters on poultry carcasses may increase the risk of cross contamination, particularly as *Campylobacter jejuni* appears to be more easily transferred from raw chicken to plates, cutting surfaces and hands than *Salmonella.*[20]

2.17 Poultry offal may also carry significant contamination with campylobacters. Christoper *et al*[21] found that about 50 per cent of contaminated chicken livers and gizzards had more than 1,100 *C. Jejuni* per gram. In the Netherlands, Hartog & de Boer[22] reported that 36 per cent of chilled chicken livers had counts of campylobacters in excess of 10^3 per gram. Counts of *Campylobacter* on chicken livers immediately after evisceration vary considerably ranging from < 20 to 1.5×10^4 cfu/g.[16] In Switzerland, Baumgartner *et al*[23] reported that 31 per cent of 139 fresh chicken livers and 16 per cent of 144 previously frozen chicken livers from retail were contaminated with *Campylobacter*.

2.18 The prevalence of *Campylobacter* in frozen chicken appears to be lower than in chilled chicken.[16] However, Svedhem *et al*[24] found that *Campylobacter jejuni* could be isolated from 6/7 chickens which had been frozen for 3 months. In a study of *Campylobacter* in chicken livers, numbers were reduced by deep freezing although 2 per cent of 44 samples were still contaminated by more than 10^2 cfu/g.[25] Conditions of chill storage appear to markedly affect survival of campylobacters on chicken.[1,26]

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HOUSE OF COMMONS SESSION 1997–98

AGRICULTURE COMMITTEE

FOOD SAFETY

MINUTES OF EVIDENCE

Tuesday 2 December 1997

PUBLIC HEALTH LABORATORY SERVICE
Professor Brian Duerden, Dr Bernard Rowe,
Professor Tom Humphrey and Dr John de Louvois

ADVISORY COMMITTEE ON THE MICROBIOLOGICAL SAFETY OF FOOD
Professor Douglas Georgala

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TUESDAY 2 DECEMBER 1997

Members present:

Mr Peter Luff, in the Chair

Mr Tim Collins	Ms Sally Keeble
Mr Alan Hurst	Mr Austin Mitchell

Memorandum submitted by the Public Health Laboratory Service (C 67)

There has been no opportunity in preparing this memorandum to secure the views of the PHLS Board. It has been prepared by:

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Dr J de Louvois, Environmental Surveillance Unit, PHLS Communicable Disease Surveillance Centre (Scientific Secretary);

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Dr P G Wall, Gastrointestinal Section, PHLS Communicable Disease Surveillance Centre;

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Executive Statement

The Public Health Laboratory Service (PHLS) is concerned about the increasing number of cases of food poisoning in England and Wales. Indeed figures for formally notified and ascertained cases of food poisoning to week 40 in 1997 are 73,240 compared with 64,039 to week 40 in 1996. In addition there are indications that the number of human isolates of *Salmonella, Campylobacter* and *Escherichia coli* O157 will show a substantial increase by the end of 1997 as compared with 1996.

The situation regarding causal organisms is constantly changing. Campylobacters were first reported in 1977 but are now the most numerous cause of bacterial enteric infections in England and Wales. *Salmonella enteritidis* (definitive pathogen) PT4 is still the commonest strain of Salmonella but since 1992 *S.typhimurium* (definitive pathogen) DT104 has been emerging as the second most common cause of human salmonellosis and over 90 per cent of isolates are multiresistant. Verocytotoxin-producing *E.coli* O157 (O157 VTEC) was first isolated in 1983 and numbers of sporadic cases and outbreaks are now increasing steadily. On the other hand numbers of cases of food poisoining due to *Staphylococcus aureus* and *Clostridium perfringens* remain static and numbers of human isolates of *Listeria monocytogenes* have decreased in recent years.

There are, however, new threats. Outbreaks and sporadic cases of viral food poisoning are increasing and protozoan parasites, such as *Cryptosporidium parvum*—and *Cyclospora cayetanensis* in the USA—have recently been associated with outbreaks of foodborne infection. Imported foods have also been implicated in outbreaks with a wide range of unusual food pathogens both in the United Kingdom and overseas. As about 30 per cent of food consumed in the United Kingdom is imported, consideration needs to be given to ways of improving the microbiological safety of such products.

Clearly there are problems at all stages of the food chain and there will be no real progress without a co-ordinated collaborative approach involving government, agriculture, veterinary and public health departments both in the United Kingdom and overseas. In addition it will require the co-operation of farmers, industry, retail sectors, and consumer associations. Ways will have to be found to overcome obstacles such as commercial confidentiality, and education will be needed to convince all involved that food safety is in the long-term interest of everyone.

The PHLS comprising the Communicable Disease Surveillance Centre, the Central Public Health Laboratory and the network of 49 public health laboratories identifies outbreaks and sporadic cases of human infection. Supported by reference laboratories, and food, water and environmental laboratories, investigations are carried out in collaboration with Local Authority Environmental Health Officers, Consultants in Communicable Disease Control and others. National epidemiological studies and microbiological surveillance of foods and waters are also carried out.

The PHLS believes that future work should focus on gaps in understanding of the epidemiology of human, food and waterborne enteric infections in order to devise more effective control strategies.

In the opinion of the PHLS food safety could be significantly improved if the following proposals were implemented:

1. A concerted effort to reduce the microbiological contamination of chickens through the eradication of *S.enteritidis* in breeder flocks, improvements in poultry processing and identification of sectors of the poultry market with consistently poor microbiological results.
2. Improvements in the inspection system used for examining food producers and wholesalers to recognise significant food safety risks before they cause disease.
3. Introduction of educational programmes to:
    - educate the public about food hygiene issues;
    - teach food hygiene in schools; and
    - improve and widen the training of food handlers.
4. Ban the sale of unpasteurised milk to the public.
5. Reinforcement of the regulations and improvement in the implementation of the cold chain for perishable foods.
6. The introduction of labelling regulations to require all foods sold at retail or to caterers to contain sufficient information to trace food back to the producers if the food is implicated in an outbreak.
7. Re-issue the Chief Medical Officer's warning with regard to the consumption of raw and lightly cooked eggs and egg dishes.
8. Review the evidence and legislation regarding the spreading of sewage, sewage sludge, farm slurry and animal waste onto agricultural land.
9. Enforcement of legislation to require all animal feedstuffs, including dried milk and supplements, to be free from *Salmonella.*
10. Active collaboration between the PHLS, MAFF and DH to fully integrate veterinary, medical and food surveillance data on the organisms responsible for foodborne disease.
11. A concerted effort to reduce the microbiological contamination of compound meat products including sausages and burgers, particularly in the "economy" products where contamination is greater.

SECTION 1

1. BACKGROUND

The overall aim of the Public Health Laboratory Service (PHLS) is to improve the health of the population through diagnosis, surveillance, prevention and control of infections and communicable diseases in England and Wales, continuing assessment of which is based on laboratory, clinical and epidemiological information from a variety of sources.

The Overview of Communicable Diseases (OVCD) published by the PHLS in 1995[1] was a comprehensive statement of the infection and disease based priorities recognised by the PHLS. Within this review *Escherichia coli* O157 and other verocytotoxin-producing *E.coli* (VTEC) were recognised as a category 1 priority, ie one requiring further development. Infections due to *Salmonella* and *Campylobacter* were included in Category 2 diseases, ie those of continuing high priority. The OVCD 1997 (currently in draft) includes foodborne disease, *Salmonella,* VTEC and *Campylobacter* as four areas of high priority activity for the PHLS.

For the period 1995–98 the PHLS Corporate Plan identified three central imperatives for the Service. One of these was to commit resources to a programme of service developments in order to strengthen the Public Health Laboratory's (PHL's) public health foundations, with particular emphasis on: "strengthening surveillance systems in general and in particular: improving understanding of infections derived from food, water and the environment; developing molecular technology; and strengthening the training and education of public health professionals". The evidence presented in this submission supports the view that there is currently justifiable concern with regard to food safety in the United Kingdom (UK) and that the PHLS recognises and shares this concern and is committed, with others, to reducing the health, economic and social burden which foodborne disease presents.

The PHLS contributed extensively to the recent report from the Parliamentary Office of Science and Technology (POST) on "Microbiological Food Safety—trends and their implications"[2] published in October 1997.

Most of the data for England and Wales contained in Section 3 of the POST report originate from the Service and the report presents an opinion with which the PHLS would not argue, namely that "there is no single set of statistics which provides a detailed and comprehensive account of the extent, sources and causes of food poisoning in this country. Instead, the wider picture has to be build up from a range of different sources". The POST report suggests that some of the most relevant of these are:

- Overall trends—all the available indicators (notifications, laboratory reports, information on outbreaks, etc.) agree that the overall rates of food poisoning have risen steadily throughout the 1980s and 1990s by up to a factor of five in 15 years. While part of this rise may be due to changes in the surveillance system, reporting procedures, etc, there is little doubt that much of it is "real". In a typical year about 100,000 people in the UK will be affected seriously enough to enter the official statistics. Of these, hundreds will be hospitalised and between 100 and 200 may die. Many more are affected, but do not enter the "official" statistics.
- Bacteria involved—*Campylobacter* (mainly *C.jejuni*) and salmonellas (most notably *S.enteritidis* phage type 4 (PT4)) are most commonly implicated in food poisoning, with both showing dramatic increases during the 1980s and early 1990s. *E.coli* O157 is less commonly encountered, but with its associated morbidity and mortality, has emerged as a major concern over this period (see below). No discernible trends are apparent in reports of *Clostridium perfringens, Staphylococcus aureus or Bacillus cereus.* Reports of both *Listeria monocytogenes* and *Yersinia enterocolitica* peaked in the late 1980s and have since declined.
- Consequences—most food poisoning bacteria cause infectious intestinal disease (IID; characterised by "classic" symptoms such as vomiting, nausea, diarrhoea, etc) which can result in serious illness and even death, although usually only among the most susceptible people (ie the young, the frail and the elderly, the immunocompromised, and those with a debilitating disease). Of greatest concern are the toxin-producing bacteria—most notably *Cl.botulinum* and VTEC (of which *E.coli* O157 is the most common type)—since these cause more serious illnesses with higher fatality rates. While no cases of foodborne botulism have been recorded in the United Kingdom since 1989, the recent rise in O157 VTEC reports is a serious concern.
- Outbreaks and sporadic cases—while large outbreaks of food poisoning (perhaps affecting hundreds of people) tend to capture the headlines, most cases of food poisoning are sporadic (being confined to individuals) or occur in small family groups.
- Geographical variation—in general, food poisoning rates tend to be lower in Northern Ireland than elesewhere in the UK. For certain types of infections—most notably O157 VTEC—rates in Scotland are significantly higher than elsewhere.
- Sources—while animal products (mainly poultry, eggs, red meat/meat products and dairy produce) are the main sources of infection, fish/shellfish and other foods (eg salads) are not uncommon.
- Prevention—most cases can be prevented by simple measures; improving the microbiological quality of food entering kitchens by measures targeted at primary and secondary food producers, adequate heat treatment of food, appropriate refrigeration, avoiding cross contamination, and clear labelling of storage and cooking instructions for consumers.

In addition to these general points contained within the POST report there are a number of critical issues which the PHLS would wish to draw to the attention of the Committee:

- Infectious dose of foodborne pathogens.
- Emergence of foodborne pathogens.
- Typing and characterisation of foodborne pathogens.
- SALMNET—a network for international surveillance of human salmonellosis.
- The significance of imported foods to food safety.
- The role of national food surveillance in the assessment of food safety.
- The role of food handlers in outbreaks of foodborne infection.
- Public health implications of sewage sludge disposal to land.
- PHLS submission to the Agriculture Committee (1993).

In addition to addressing these topics this submission will present information on other areas of food safety risk identified in the Committee's press release (Section 2) in which the Service has experience and competence (Section 3). Section 4 of this submission will identify significant gaps in current scientific understanding of food safety issues and suggest measures that can be taken to reduce these gaps. In addition the Service will provide comment on the appropriateness of the methods and resources employed to minimise food safety risk.

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1.1 INFECTIOUS DOSE OF FOODBORNE PATHOGENS

Salmonella spp.

Data on the number of non-typhoidal salmonella organisms required to cause disease come from volunteer studies and investigations of outbreaks in which the numbers of bacteria in contaminated foodstuffs were known. Volunteer studies are limited because the number of subjects is small. The infectious doses in such studies have varied with serotype but for non-typhoidal *Salmonella* are usually in the range of 10^5–10^7 organisms[1,2]. Data from outbreaks suggest that much lower doses appear to be able to cause disease. For example, the infective dose in the 1983 outbreak of *S.napoli* associated with infected chocolate bars was estimated to be 2–3 organisms/gram[3] and in the 1985 outbreak of *S.ealing* associated with milk powder, the number of organisms was estimated at 1.6/450 gram[4]. From these results it is apparent that not only the infective dose but also the mode of delivery of the organism to the gastrointestinal tract is critical in the disease process. The size of the infecting dose may also be influenced by a host of related factors such as age, immune status, underlying debilitating disease or stress factors, and the physiological state of the stomach and upper small intestine at the precise time of the intake of the organism.

O157 VTEC

The number of organisms needed to produce infection appears to be low, and illness may occur after the ingestion of less than 100 organisms. In a large outbreak in the USA in 1993, as few as 40 organisms may have produced disease[5], and in an outbreak in South Wales, only 2 organisms per 25g were isolated from raw beefburger meat tested in the course of the investigation[6]. In addition, reports of laboratory-acquired infections also suggest the infectious dose may be small[7].

Campylobacter spp.

Human volunteer experiments have shown that ingestion of a dose as small as 500 bacterial cells can produce disease symptoms[8]. Neither the incubation period nor the severity of disease was affected by the size of the dose, but the attack rate among the volunteers increased with an increase in the number of bacteria given. This implies that when an equally small dose is ingested by a group of individuals, not all of them will become ill. Whether an individual becomes ill or not may be determined by a number of complex interacting physiological factors including the immune status of the individual to *Campylobacter.*

Shigella spp.

Although not a zoonotic pathogen, numerous food or water-borne outbreaks of shigellosis have been reported. These are frequently associated with direct contamination of water supplies or food by human faeces. Volunteer studies have indicated that ingestion of very small numbers of organisms varying from less than 100 to a few thousand bacterial cells is sufficient to cause disease[9].

Listeria monocytogenes

Listeria infections can occur in pregnant women when infection within the uterus may result in abortion. Should abortion not occur then infections in neonates may develop. Studies of a sporadic case associated with the consumption of contaminated goats' milk soft cheese have suggested that the numbers of organisms causing the disease was greater than 10^7/gram[10]. In other studies of human listeriosis associated with contaminated foods the numbers of bacteria have ranged from 10^3–10^6 organisms/gram[10].

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1.2 EMERGENCE OF FOODBORNE PATHOGENS

Under this heading there is a need to consider three pathogens, *Campylobacter*, multiresistant *S.typhimurium* definitive phage type 104 (DT104 and O157 VTEC), and also the food safety implications of modified organisms in the food chain.

Campylobacter spp.

Campylobacter spp. are now the most common cause of bacterial enteric infections in England and Wales. Since first being reported in 1977 the annual totals have increased progressively and in 1996 there were more than 43,000 reported cases in England and Wales. Most infections are apparently sporadic but outbreaks have been reported associated with water, milk and poultry[1]. Of the 17 *Campylobacter* species the most common in human disease is *C.jejuni* which accounts for over 90 per cent of infections per annum. Epidemiological studies of *Campylobacter* have been restricted because of limitations in existing serotyping methods used for large-scale surveillance activities. Over the last two years the PHLS Laboratory of Enteric Pathogens (LEP) has develped an improved serotyping scheme based on heat-stable (HS) antigens which is capable of typing large numbers of strains[2]. The results of a pilot study carried out in 1996–97 are currently being evaluated but a preliminary assessment clearly demonstrates the value of the improved typing scheme. With effect from 1 April 1997 a complete reference service is being provided for PHLS and National Health Service (NHS) laboratories in Wales and North-West England. Because of limited resources, a service for the rest of England is provided only for investigations of putative outbreaks. It is now intended that the typing system shall be used to investigate the occurrence and epidemiology of *Campylobacter* throughout the food chain.

Multiresistant S.typhimurium DT104

Since 1992 *S.typhimurium* DT104 has been second only to *S.enteritidis* PT4 in cases of human salmonellosis in England and Wales, and in 1996, 4,006 cases were confirmed by LEP[3]. Since 1990 a strain with chromosomally-encoded resistance to ampicillin, chloramphenicol, streptomycin, sulphonamides and tetracyclines (R-type ACSSuT) has become increasingly common[4] and in 1996 96 per cent of isolates received in LEP were multiresistant (to four or more antimicrobials). Multiresistant *S.typhimurium* DT104 has now been reported from several European countries[5] and there have been outbreaks in the USA both in cattle and humans[6,7]. In 1995 a broadening in the spectrum of resistance in *S.typhimurium* DT104 from humans in England and Wales was reported[8] and in 1996 24 per cent of isolates showed additional resistance to trimethoprim (MIC: >16mg/L) and 14 per cent to ciprofloxacin (MIC: 0.25–0.5mg/L)[3].

The primary food animal reservoir of multiresistant *S.typhimurium* DT104 is cattle but since 1993 the organism has become the predominant *S.typhimurium* strain in other food animals including sheep, goats, pigs, horses and poultry[9]. The prevalence of the pathogen in a number of different food animals creates the potential for a wide range of foodstuffs to become contaminated[8,10]. A recent PHLS study has demonstrated a high incidence of *S.typhimurium* DT104 in sausages purchased from a range of retail outlets in the UK. In this study 17 per cent of sausages were found to be contaminated with *Salmonella* and of these, 14 per cent contained *S.typhimurium* DT104[10]. The diverse animal reservoir and number of potentially infected foods makes control of this pathogen extremely difficult.

One plasmid profile type, characterised by the presence of a single plasmid of approximately 60 megadaltons accounts for most of the increase in both animal and human reports of *S.typhimurium* DT104 of R-type ACSSuT[11]. During 1994 and 1995 a case control study was undertaken to investigate infections in cattle in the UK. A case was a farm with one or more symptomatic cattle infected with multidrug resistant *S.typhimurium* DT104 and a control was a farm selected at random where no infected cattle had been identified. The study identified several risk factors including the introduction of new stock to the herd, no isolation facilities, stress of calving and the spread of infection by birds and feral cats[12]. There was an increased risk of disease occurring when cattle were housed, possibly indicating that persistently contaminated buildings may be a source of infection. Purchasing cattle from dealers/markets where there is obviously more mixing of stock and greater opportunity for spread of infection, was a greater risk than purchasing direct from other farms[12]. Widespread contamination of the environment, equipment and vehicles was common in the early stages of herd infection. The organism has also been isolated from farm workers and their families[13], demonstrating an occupational risk for this population subgroup. The strain has also been isolated from domestic cats[14] and dogs.

A PHLS case-control study conducted in 1993 demonstrated an association between illness of patients infected with *S.typhimurium* DT104 and the consumption of several foods including pork sausages, chicken and a particular brand of meat paste[15]. This study showed a hospitalisation rate of 36 per cent (38/105) with length of stay ranging from 1-35 days and a mortality rate of 3 per cent (10/295). This mortality is far in excess of that found with other nontyphoid salmonellas; however evidence from LEP has demonstrated that this strain does not appear to be any more virulent or more invasive (bacteraemia <1 per cent) than other salmonellas in England and Wales). The apparent high mortality may be explained by the fact that nine of the deaths were in cases aged over 60 with five having concurrent morbidities that may have also contributed to their deaths.

The emergence of human and animal isolates with additional resistance to ciprofloxacin has followed the licensing in the UK in November 1993 of enrofloxacin, a fluoroquinolone antibiotic used for treatment in all species and for prophylaxis in poultry, calves and possibly pigs. The majority of human cases of salmonellosis do not require treatment with antibiotics, fluid replacement therapy being adequate to ensure recovery. However for a proportion of cases particularly the immunosuppressed, some elderly people with concurrent morbidities and the very young, effective antibiotic therapy may be lifesaving. For the minority of cases infected with multidrug resistant *S.typhimurium* DT104 who require an antibiotic the therapeutic options are reduced. In addition those cases treated empirically while awaiting antibiotic sensitivity results may be given ineffective therapy.

A Department of Health (DH) funded study is currently in progress to investigate methods of subtyping *S.typhimurium* DT104 and to investigate the genetic basis for the integration of the resistance genes into the bacterial chromosome.

O157 VTEC

The first reported outbreak of O157 VTEC was in the USA in 1982 and was associated with beefburgers[16] and the earliest recognised outbreaks in the UK were in 1982 and 1983[17]. O157 VTEC was first isolated in the UK in 1983[18] and since then LEP has provided a reference service for these organisms. The number of cases in England and Wales confirmed by LEP has increased from six in 1983 to 119 in 1989 and 660 in 1996, and indications are that in 1997 the numbers of cases are still increasing (867 for January to September 1997; provisional). When allowance is made for improvements in ascertainment during the 1980s and the effect of the recommendation by the Advisory Committee for the Microbiological Safety of Food (ACMSF) to screen all diarrhoeal samples for O157 VTEC the incidence of disease caused by these organisms still appears to be increasing. Although the reasons for this are unclear, it is likely that the present increase is real.

Studies at Sheffield PHL have demonstrated that cattle[9] and more recently sheep[20] are the major reservoirs for O157 VTEC[21], and they have been detected in carcasses and in retail meats of bovine and ovine origin. The PHLS is giving very high priority to work on O157 VTEC. Enhanced surveillance is being carried out in a national case-control study in order to identify and evaluate the risk factors. The PHLS is co-ordinating a UK-collaborative study of childhood haemolytic uraemic syndrome (HUS) which will allow comparison with a previous study made in the 1980s[22]. In addition there are two European Community (EC)-sponsored projects in progress on laboratory and surveillance studies of VTEC including strains belonging to serogroups other than O157. One such study (ENTERNET) is a multinational surveillance study that is at present restricted to European countries although there are plans to extend this study to North America and several other countries. Research work funded by the DH is investigating virulence properties of VTEC in addition to VT production with the aim of developing improved diagnostic methods.

FOOD SAFETY IMPLICATIONS OF MODIFIED ORGANISMS IN THE FOOD CHAIN

Inherent Tolerance and Virulence in Salmonellas

Natural modifications can occur in some foodborne pathogens. In addition some bacteria can respond to conditions and environments common in food production.

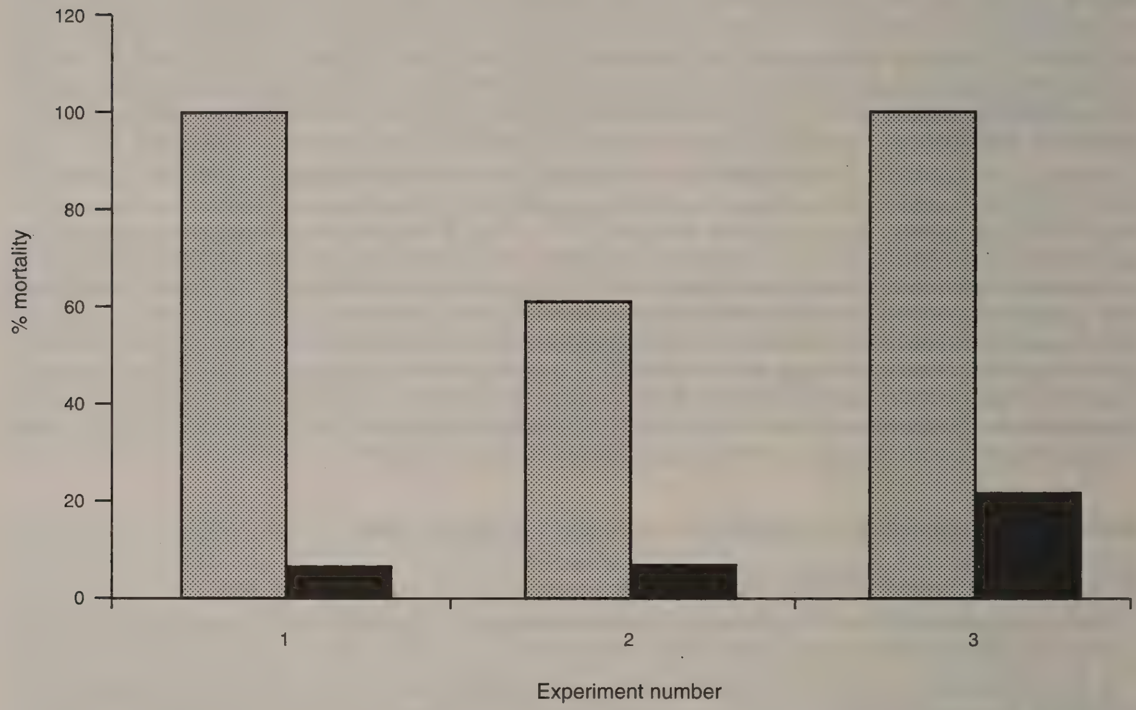
Recent PHLS work funded by the Ministry of Agriculture Fisheries and Food (MAFF) and the DH[23-25], has shown that wild type isolates of *S.enteritidis* PT4 and *S.typhimurium* DT104 can differ markedly in tolerance to certain hostile environments and in their ability to infect animal models.

The majority of isolates of *S.enteritidis* PT4 (c75 per cent) and *S.typhimurium* DT104 (c90 per cent) show enhanced heat-, acid- and peroxide-tolerance, survive well in aerosols and on surfaces, and are more virulent in mice (Fig.1) and more invasive in the reproductive tissues of laying hens (Fig. 2)[26]. A minority of the above salmonellas are heat-, acid- and peroxide-sensitive, survive poorly, and show low virulence in animals infected by the oral route (Figs. 1-2). It is important that when vaccines are developed or intervention measures are assessed they are challenged with salmonellas from the more virulent/tolerant population. Isolates of *E.coli* 0157 appear to show similar population differences[27] although their virulence has not yet been studied.

Recent PHLS work[25] has shown that the avirulent and virulent populations of *S.enteritidis* PT4 and *S.typhimurium* DT104 can be differentiated on the basis of colonial morphology on agar plates incubated below 30°C. Colonies of the avirulent/sensitive salmonellas remain smooth and resembled those "typical" of *Salmonella.* Those of the virulent/tolerant salmonellas take on a convoluted appearance reminiscent of *Bacillus* spp. The "convoluted" colonies are related to the presence of certain virulence-associated surface structures on the bacterial surface and are a manifestation of differences in the responses of *Salmonella* to downward shifts in temperature. The formation of elongated filaments by virulent salmonellas at 4°C (see Section 3.2.5) is a more extreme example of low temperature responses. It is possible to differentiate between the two *Salmonella* populations using molecular techniques as the sensitive/avirulent salmonellas have a deletion in that part of the bacterial genome which regulates responses of cells to potentially damaging environments[27] (see below).

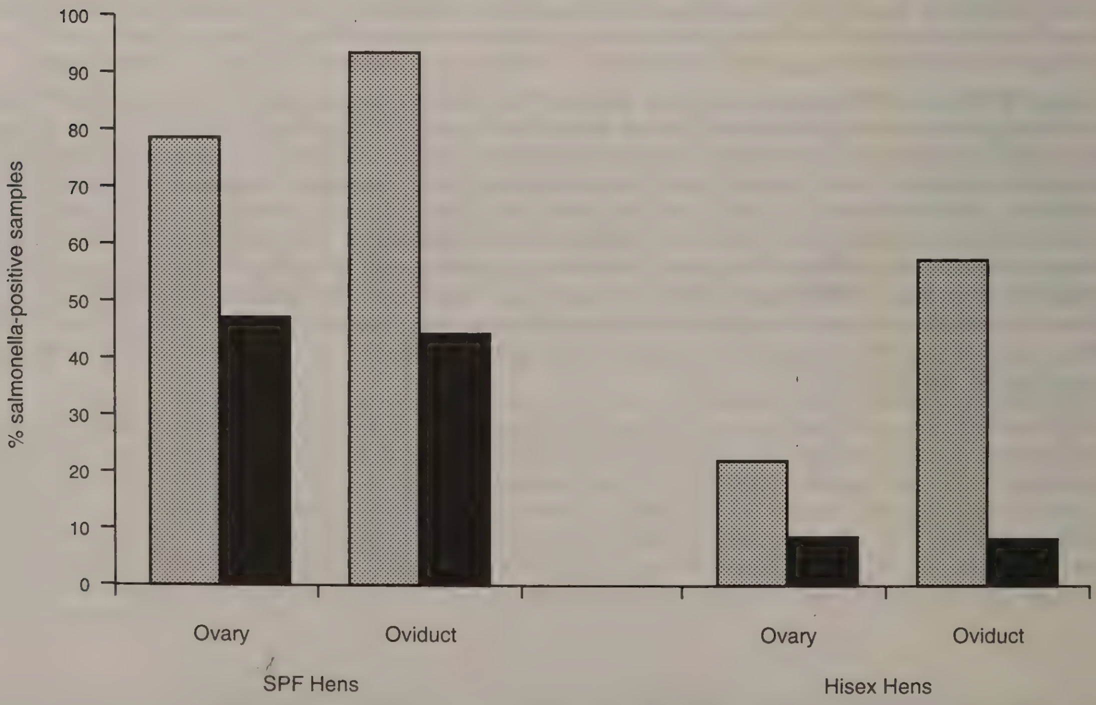
1.2 Fig 1: Mortality in mice infected with *S.enteritidis* PT4

Shaded bars show data on mice infected with a tolerant/virulent isolate. Black bars show data from mice given a non-virulent/sensitive isolate.



1.2 Fig 2: Invasion of reproductive tissues by *S.enteritidis* PT4 isolates

Shaded bars show data from hens infected with a tolerant/virulent isolate. Black bars show data from hens given a sensitive/non-virulent isolate. Hens infected by direct inoculation into the crop..



Responses of Foodborne Pathogens to Foods and Food-Associated Environments

The speed at which foodborne pathogens, such as *Salmonella* or *E.coli* O157, can multiply and the speed with which they can respond to changes in their environment presents great challenges for those with an interest in control. All foodborne pathogens are capable of responding to environmental change. These responses are known as "stress responses" and will be illustrated largely by reference to *Salmonella,* and to *S.enteritidis* PT4, in particular, as the changes that can occur in this bacterium are typical of those of other salmonellas and *E.coli* O157.

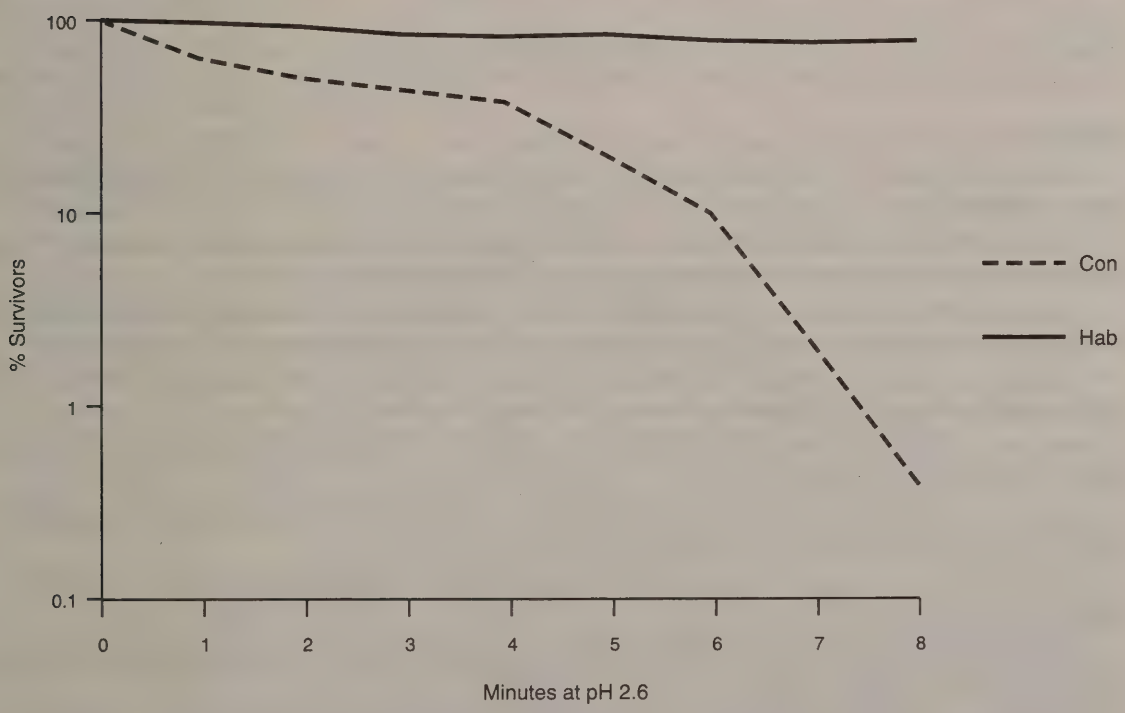
Raw egg mayonnaise is an important vehicle in *S.enteritidis* PT4 infection. This food is mildly acidic (c. pH 4) and when present in this environment *S.enteritidis* PT4 responds by activating cellular mechanisms or synthesising proteins which protect the cell. This has the consequence of permitting the bacteria to survive at much lower pH values analogous to those found in the stomach[28] (Fig. 3). Exposure of *S.enteritidis* PT4 to alkaline environments (pH 9) like those found in egg albumen cause the synthesis of specific proteins which make the bacteria more heat tolerant than control populations maintained at pH 7[29] (Fig. 4). The albumen is one of the principal sites of contamination in egg contents positive for *S.enteritidis* PT4.

Culture at high temperature (greater than 40°C) or shift to high temperature, such as might occur during many forms of cooking renders *S.enteritidis* PT4 significantly more heat- and acid-tolerant[30].

It is clearly important that control measures which involve the destruction of bacteria at high temperature or their control/elimination by low pH take account of the possible effects on tolerance of any conditions which the bacteria may experience before challenge. It is also important that critical control points are challenged not only with cells exposed to appropriate conditions but with strains of foodborne pathogens which are inherently more likely to survive the process.

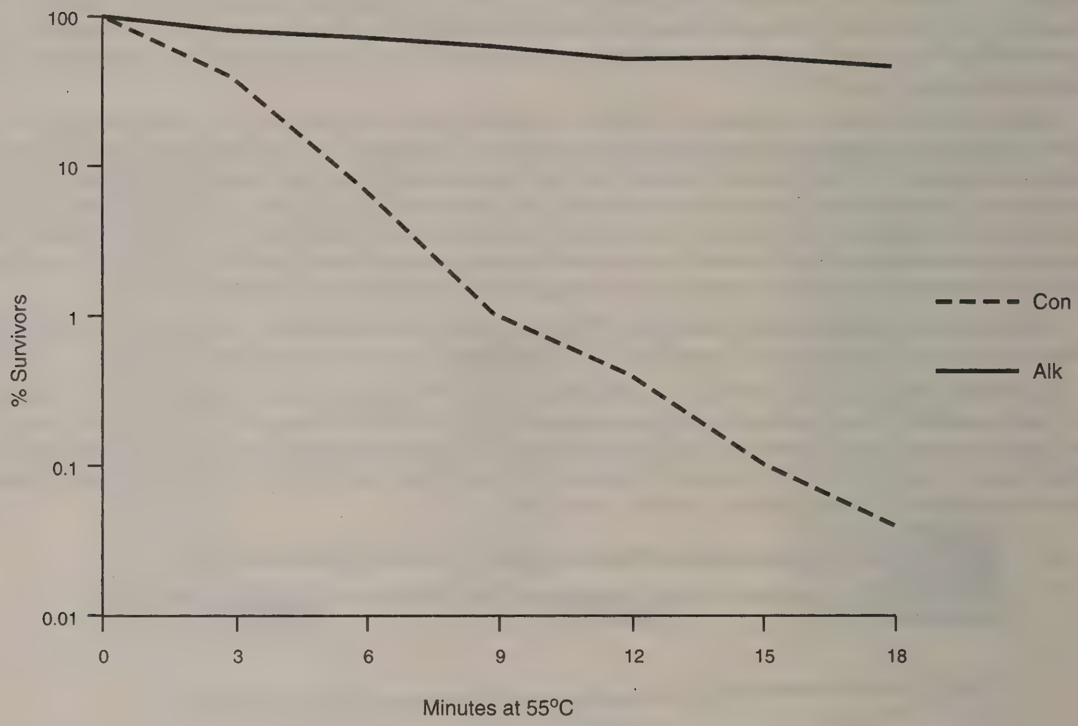
1.2 Fig 3: Effect of exposure to mild acid on acid tolerance in *S.enteritidis* PT4

Control (con) cells maintained at pH 7. Habituated (hab) cells exposed to pH 4 for 30 minutes.



1.2 Fig 4: Effect of exposure to alkali (pH 9) on heat tolerance in *S.enteritidis* PT4

Control (con) cells maintained at pH 7. Alkali-exposed (alk) cells held at pH 9 for 30 minutes.



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1.3 Typing and Characterisation of Foodborne Pathogens

For meaningful epidemiological studies of foodborne diseases precise identification and subtyping of the organisms involved is an essential prerequisite and the PHLS continues to make a significant contribution in this area. For organisms submitted to the LEP the policy is to use a hierarchical approach[1]. This is based initially on phenotypic methods—serotyping, phage typing and antibiogram analysis—for example, the improved serotyping method for *Campylobacter*[2]. For outbreak investigations this is supplemented by a range of deoxyribonucleic acid (DNA)-based molecular methods for discrimination within known phenotypic types. Such methods are based on the analysis of plasmid DNA, chromosomal DNA (genotyping) or phage DNA. Plasmid-based methods include plasmid profile typing and plasmid fingerprinting; genotyping methods include ribotyping, restriction fragment length polymorphism (RFLP) analysis, insertion sequence (IS) *200* fingerprinting and pulsed-field gel electrophoresis (PFGE). At present the method providing the most discrimination is PFGE but in future this may be replaced by more rapid, polymerase chain reaction (PCR)-based methods. Other DNA-based methods include flagellar (*fla*) gene subtyping for *Campylobacter*[3] and cholera toxin (CT) gene fingerprinting for *Vibrio cholerae*[4]. Phage DNA-based methods include Vero cytotoxin (VT) gene subtyping for *E.coli* O157[5]. A range of more rapid PCR-based methods is being assessed.

The value of phenotypic methods (serotyping, phage typing, antibiogram analysis) for outbreak investigations has been clearly established over many years and with several pathogens. For salmonellas, recent examples of phenotypic methods supplemented by molecular techniques for outbreak investigations include the 1995–96 international outbreak of *S.agona* associated with snack food imported from Israel[6], and the outbreak of *S.anatum* in 1996–97 associated with formula-dried milk from France[7]. The combined use of phenotypic and genotypic methods has also been applied in epidemiological studies of O157 VTEC. Molecular subtyping within the common phage types of *E.coli* O157 allows good strain discrimination and examples include the outbreak investigation in which O157 VTEC was first isolated from a retail meat product in Britain[5], several outbreaks linked to the consumption of unpasteurised milk[8] and, recently, outbreaks associated with visits to open farms[9].

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1.4 SALMNET—A NETWORK FOR INTERNATIONAL SURVEILLANCE OF HUMAN SALMONELLOSIS

Surveillance of cases of human salmonellosis on an international basis provides the opportunity to detect international clusters that indicate an outbreak from a common source at an early stage, evaluate the effectiveness of prevention measures and monitor the trends in this disease.

Because of the need for a co-ordinated approach to international surveillance a pan-European surveillance system, SALMNET, has been created. This system has consolidated the network of microbiologists and epidemiologists responsible for the national surveillance of human salmonellosis in the majority of EC countries. The different phage typing schemes for *S.enteritidis, S.typhimurium* and *S.virchow* in use across Europe are being harmonised, and all participants are working towards the phage typing of all isolates of these salmonellas. A European database has been established to which all participants have supplied retrospective, non-aggregate *Salmonella* data for a period of up to five years. Data on each laboratory-confirmed isolate of *Salmonella* are being supplied with minimum delay, creating and maintaining a dynamic database that can identify international clusters, be of value in their epidemiological investigation and also be valuable in identifying long-term trends in salmonellosis in Europe.

International Collaborative Investigations

SALMNET has demonstrated the added value of an interactive international network in helping to identify and investigate international outbreaks of gastro-intestinal disease. Individual countries identifying apparently isolated incidents now have the facility to feed this information into the network, receive replies from other participating countries and hence ascertain whether the incident is confined to a single country or if it is of wider international significance. Negative replies can be of as much value as positive ones in helping eliminate potential vehicles of infection. Often at the start of an outbreak there may be several possible vehicles and eliminating any possibilities can allow public health authorities to concentrate their resources more effectively. Whilst not every investigation has lead to the identification of the source of an outbreak, either nationally or internationally, there have been several notable successes (Table 1) when investigations have resulted in the vehicle being detected thus allowing public health intervention measures to be implemented. These international collaborative investigations have only been possible because of the SALMNET network.

1.4

Table 1

INTERNATIONAL OUTBREAKS INVESTIGATED BY SALMNET

Outbreak	*No. of cases*	*Countries with cases*
E.coli 0157/HUS [1, 2]	12	Denmark, England and Wales, Finland, Sweden
S.anatum [3]	19	England and Wales, France, Scotland
S.agona [4]	2,000+	Canada, England and Wales, Israel, USA
S.dublin [5]	30+	France, Switzerland
S.stanley [6]	100+	Finland, USA
S.tosamanga [7]	28	Eire, England and Wales, France, Germany, Sweden, Switzerland
Shigella sonnei [8-11]	100+	England and Wales, Germany, Norway, Scotland, Sweden

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1.5 THE SIGNIFICANCE OF IMPORTED FOODS TO FOOD SAFETY

The PHLS is the main provider of a microbiological examination service to Port Health Authorities (PHAs) in England and Wales for the examination of imported food products from non-EC countries. Once admitted through a Border Inspection Post (Table 1) in any Member State these products have access to all EC countries without any further control. Airports also receive imported food products and are subjected to the same inspections as seaports. Further work is required to establish the appropriate level of inspection at airports.

1.5

Table 1

EC APPROVED BORDER INSPECTION POSTS IN ENGLAND AND WALES FOR THE IMPORTATION OF PRODUCTS FOR HUMAN CONSUMPTION

Port	*Approved for*
Tyne	All products of animal origin
Teesport and Middlesbrough	All products of animal origin
Hull and Goole	All products of animal origin
Immingham and Grimsby	All products for human consumption
Great Yarmouth	All products of animal origin
Felixstowe	All products of animal origin
Ipswich	All products of animal origin
Harwich	All products for human consumption
London	All products of animal origin
Dover	All products of animal origin
Newhaven	All products of animal origin
Portsmouth	All products of animal origin
Southampton	All products of animal origin
Falmouth and Truro	Frozen and chilled fishery products
Avonmouth	Frozen and chilled products of animal origin
Cardiff	All products of animal origin
Pembroke Dock/Milford Haven/Fishguard	All products of animal origin
Liverpool and Birkenhead	All products of animal origin
Manchester Ship Canal	All products of animal origin not chilled or frozen
Heysham	All products of animal origin except uncartoned red meat

Imported food arrives from many parts of the world and is susceptible to many hazards ranging from pathogen contamination to product deterioration. The products are diverse (Table 2) in nature and amount, as are the processes that some have undergone. Identification of some products can be difficult, including whether they are in a raw or processed state. This can make microbiological examination, interpretation and assessment of the significance of some findings complex. This situation is likely to continue increasing as new sources of food and new products are developed and imported. Some products are covered by specific guidance such as EC Decisions and Statutory Instruments. However, the majority are sampled on the inspectors experience based on available information.

1.5

Table 2

NON-EC FOOD AND DRINK IMPORTS INTO THE UK FOR JANUARY-OCTOBER 1996

Description	*Quantity (tonnes)*	*Value (£'000)*
Animal fats and oils	78,479	28,050
Animal or vegetable fats and oils, processed; waxes of animal or vegetable	118,485	47,333
Beverages	338,994	420,866
Cereals and cereal preparations	669,704	170,511
Coffee, tea, cocoa, spices and manufacturers thereof	490,754	602,549
Dairy products and birds' eggs	65,440	129,746
Feeding stuff for animals (not including unmilled cereals)	2,897,957	429,689
Fish (not marine animals), crustaceans, molluscs and aquatic invertebrates	339,953	784,307
Fixed vegetable fats and oils, crude, refined or fractionated	376,008	162,130
Live animals	717	66,415
Meat and meat preparations	239,629	502,983
Miscellaneous edible products	51,079	79,148
Oils seeds and oleaginous fruits	1,065,560	254,104
Sugars, sugar preparations and honey	1,754,388	555,154
Vegetables and fruit	2,273,217	1,444,936

Source: MAFF.

There are many examples of imported foods causing human illness in the UK and elsewhere (Table 3). The incriminated foods had originated from both developed and developing countries. Currently there is concern that food in international trade may carry pathogenic microorganisms that could result in outbreaks of illness. Importing countries have sometimes responded to this concern with measures which are neither scientifically based nor statistically sound, and may be an impediment to fair trade. There is also concern that once a consignment passes through an EC Border Inspection post, be it in Greece, Italy or the UK then it may be distributed throughout the EC without further check. The possibility of introducing new foodborne pathogens into countries (eg new *Salmonella* strains) or spreading pathogens across boundaries from endemic areas to non-endemic areas (eg *V.cholerae*) contributes to the concern regarding third country imports and was a consideration in the recent EC bans on fishery products from a number of third countries.

1.5

Table 3

SOME OUTBREAKS OF FOODBORNE DISEASE ASSOCIATED WITH FOOD IN INTERNATIONAL TRADE—1990 TO 1997

Food	*Agent*	*Countries where illness occurred*
Alfalfa	*S. newport*	Finland, Sweden, USA
Iceberg lettuce	*Sh. sonnei*	UK, Norway, Sweden, Germany
Melon	*Salmonella* spp	USA, Canada
Strawberries	Hepatitis A	USA
Raspberries	*Cyclospora* spp	USA, Canada
Flavoured savoury snack	*S. agona*	UK, USA, Israel, Canada
Infant dried milk	*S. anatum*	UK, Ireland, France
Cheese	*S. dublin*	France, Switzerland
Fish (many examples)	Scombroid (histamine)	UK, France, Denmark, Spain, Canada
Oysters	Small round structured viruses	UK, Denmark
Spices, paprika-flavoured snacks	*Salmonella* spp	Germany
Clams	*V. cholerae*	Japan
Fish	Ciguatera	Canada, USA
Crabs	*V. cholerae*	USA
Coconut milk	*V. cholerae*	USA
Cockles	Hepatitis A	Singapore
Coconut, de-shelled	*S. paratyphi*	Singapore

The global movement of foods is increasing and with about 30 per cent of the food consumed in the UK being imported, most from non-EC countries, consideration needs to be given to the measures required to improve the microbiological safety of a wide range of foods.

1.6 The Role of National Food Surveillance in the Assessment of Food Safety

The PHLS carries out various types of surveillance on the microbiology of food, according to the public health issue. Random unstructured surveillance is no longer acceptable and is an inappropriate use of resources.

Large broad-based surveys, which are usually government-funded because of their high cost, involve large numbers of samples—for example surveys of 1,220 whole chickens in 1995 and 13,900 boxes of eggs in 1995–96 for the presence of *Salmonella*. These surveys which are often repeated at 2–4 year intervals address national issues relating to the incidence and prevalence of micro-organisms in particular high volume foods.

- Under the EC Co-ordinated Food Control Programme (ECCFCP), member states are required to participate in annual programmes of work relating to food safety which usually include a microbiological component. These projects are designed to identify differences between the quality of foods in different member states. The PHLS processes the majority of samples examined under the ECCFCP in England and Wales and in order to obtain maximum value from these studies the Service carries out further analysis of the data to determine whether there are problems within particular subsets of food or retail premises.
- The Local Authorities Co-ordinating Body on Food and Trading Standards (LACOTS) and the PHLS have set up a programme of co-ordinated food surveillance projects through the local authorities' Food Liaison Groups. This programme is designed as a "bottom up" exercise in which foods of concern are identified by Environmental Health Officers (EHOs) or PHLS microbiologists and surveys are organised nationally on those foods which there is a general or widespread concern. The most recent study was of butchery products and butchery premises in response to the Pennington inquiry.

- The PHLS organises and funds studies of its own, usually in response to the recognition of a public health problem. These may be local or national depending on the problem concerned and result in reports which are distributed to the DH and the ACMSF prior to being published. An example is the study of raw (Green top) cows milk on retail sale in 1996–97.
- Food Liaison Groups and the associated PHLS laboratory establish annual surveillance programmes of their own which are designed to address largely local issues. Inevitably these are smaller than the national surveys and usually the data do not lend themselves to statistical analysis. Nevertheless, such studies are of considerable value and on occasions have identified problems of national significance.

These surveillance exercises collectively contribute to a greater understanding of the microbiological problems associated with food and to their more rapid resolution. All of the reports are distributed widely and where appropriate they are published in peer review journals. The national food surveillance studies carried out between 1993 and 1997 are summarised in Table 1. The results of many of these surveys have been of considerable assistance in the formulation of the PHLS Microbiological Guidelines for various ready-to-eat foods sampled at the point of sale. (See Section 5).

Welsh Food Microbiological Forum

The laboratories in Wales and the Communicable Disease Surveillance Centre (Wales) have supported local authorities in a scheme of sampling of ready-to-eat foods at point of sale, with the sale premises randomly selected from the registers each authority is required to hold under the Food Safety Act (1990). This representative sample of premises has given insights into the ranges of bacterial quality (as measured by recognised indicator bacteria) that occur as well as highlighting foodstuffs and types of premises (categorised either by the number of cash registers as a proxy for volume of trade or according to the risk category in the advisory code of practice under the Food Safety Act) to which further attention can usefully be given.

1.6

Table 1

FOOD SURVEILLANCE STUDIES (MICROBIOLOGICAL QUALITY) CARRIED OUT BY THE PHLS 1993 TO 1997

Food Surveillance Programme	*Food*	*Sampling Period*	*Total No. Samples*
ECCFCP	Ready-made foods	Jun–Dec 1993	8,224[‡]
ECCFCP	Ice-cream and other edible ices	Jun–Dec 1993	2,612
DH	Raw whole chicken	Dec 1993–Mar 1994	1,220
LACOTS/PHLS	Take-away chicken pieces	Apr–May 1994	4,055
ECCFCP	Paté	Apr–Dec 1994	3,073
LACOTS/PHLS	Pies/pasties from mobile vendors	Sept–Oct 1994	775
PHLS	Raw sausages	Jul 1994–Jan 1995	786
PHLS	Soft cheese	Jan–Feb 1995	1,437
LACOTS/PHLS	Cooked rice from restaurants and take-aways	Apr–May 1995	4,162
ECCFCP	RTE[†] refrigerated salads and crudités	Jun–Dec 1995	2,552
LACOTS/PHLS	Ice-cream scoop water	Jul–Aug 1995	1,879
LACOTS/PHLS	Cooked doner kebab meat	Oct–Nov 1995	2,538
DH	UK-produced hen eggs	May 1995–Apr 1996	13,500[§]
LACOTS/PHLS	Cooked burgers	Jan–Feb 1996	3,440
LACOTS/PHLS	Ice used to cool drinks and RTE foods	May–Jun 1996	4,359
LACOTS/PHLS	Cooked RTE out-of-shell molluscs	Jul–Oct 1996	2,425
ECCFCP	Dried and fermented meat and meat products	Jul–Dec 1996	2,981
PHLS	Retail green-top (unpasteurised) milk	Mar 1996–Jul 1997	1,205
LACOTS/PHLS	Butchery products and butchers' premises	May–Jul 1997	1,360[¶]
LACOTS/PHLS	Soft ice-cream and baked egg custard tarts	Aug–Oct 1997	On-going

‡ Ready-made foods including desserts and cakes (1,057), pancakes, pies and flans (87), coleslaw and prepared salads (923), dips (248), sandwiches (324), fruit, vegetables and rice (144), savoury foods (725), meat, vegetable, pasta and seafood meals requiring reheating (494), seafood (649), meat and fish paté (359), pies and pasties (1,194), cooked meats (1,227), raw meats (793).

† Ready-to-eat.

§ Number of boxes of eggs (6 eggs per box).

¶ Number of premises sampled (samples included up to two raw and two cooked meats, and up to five environmental samples per premises).

1.7 The Role of Food Handlers in Outbreaks of Foodborne Infection

A food handler is defined as a person engaged in the manufacture, storage or transport of food products involving direct contact with the product, or who is engaged in the preparation or serving of food within a catering establishment, canteen or retail food outlet[1]. In 1995 the PHLS published recommendations[2] about exclusions from work for various types of foodborne microbial disease based on the identification of particular groups of people at special risk of transmitting pathogens from themselves to others through food. One of the groups concerned food handlers and defined those presenting significant hazard as persons "whose work involves touching unwrapped foods to be consumed raw or without further cooking". Food handlers who did not fall into this special risk group, however, presented only minimal risk of spreading gastrointestinal illness once they were well and had normal, well-formed stools. Unfortunately those investigating outbreaks of foodborne disease do not always apply this strict definition and may therefore include others who do not come in direct contact with food[3].

Food handlers whether they are symptomatic or not can be involved in foodborne outbreaks:

1. As vectors, by passively transmitting food poisoning pathogens from, for example, a raw contaminated product to a ready-to-eat food.
2. As excretors, by transferring pathogens from themselves to food, as a result of poor personal hygiene. When infected food handlers are identified in the course of outbreak investigations they are often reported as a contributing factor. However, before implicating food handlers consideration must be given to the timing of their illness (were they ill at the time of food preparation?), the implicated pathogen and food (*S.enteritidis* PT4 and eggs and/or chicken based food), and the hygiene practices in the kitchen. Most often food handlers become infected by consuming contaminated food during preparation or afterwards. Investigators should only implicate infected food handlers as the source of an outbreak when there is strong supporting evidence, and must distinguish infected food handlers from food handlers with bad hygiene practices when implicating them as the cause of outbreaks. With the possible exception of outbreaks due to small round structured viruses (SRSV) infected food handlers are infrequently the cause of outbreaks.
3. By bad practices in the kitchen, such as failure to refrigerate food or cook it properly.

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1.8 Public Health Implications of Sewage Sludge Disposal to Land

Large amounts of treated and untreated sewage sludge are applied to agricultural land each year in the UK. Any pathogens contained in these materials may infect wild or farm animals by direct contact or by grazing on contaminated land. They may infect man directly or by the ingestion or handling of contaminated crops, especially fresh produce which is eaten without heat treatment. It is often difficult to prove unequivocally that sewage or animal waste applied to land was the source of the pathogens in food poisoning cases because infection may be sporadic. Because of this there are concerns about the health effects of the use and disposal of sewage sludge.

- Sewage sludge and animal wastes may contain a wide range of human and animal pathogens including bacteria (*Salmonella, Campylobacter, Shigella* and pathogenic *E.coli* including *E.coli* O157), enteric viruses (including SRSV, rotavirus, Hepatitis A virus and enteroviruses), intestinal worms (tape worm, *Ascaris*) and protozoa (*Cryptosporodium, Giardia, Cyclospora*).

- After being applied to soil many bacterial pathogens can persist for 2–3 months before they are reduced to negligible numbers. Certain human pathogens, eg *E.coli* O157, *Salmonella* and *Shigella,* may survive in soil systems for over 150 days with only a small decline in numbers. Some human pathogens can survive in water courses for extended periods.
- Some human pathogens can survive for extended periods in herds of agricultural animals without causing these hosts any apparent illness. Spreading of wastes containing these pathogens onto land may increase the number of asymptomatic animal carriers of particular human pathogens (eg *E.coli* 0157).
- Although measures are taken to limit the potential for pathogen survival in sludges before they are applied to land, contaminated soil still remains a route by which a wide range of microorganisms may contaminate crops. In 1985 the first community outbreak of *E.coli* O157 in the UK was traced to handling manured vegetables[1]. Lettuce and other fresh produce (apparently contaminated by manured soil or contaminated irrigation water) have been recognised as a source of *E.coli* O157, *Salmonella* and *Shigella*[2,3].
- *Cyclospora cayetanensis* is a coccidian enteric parasite which has recently caused a number of outbreaks of diarrhoeal disease in the USA following the consumption of contaminated soft fruit, lettuce, and herbs[4,5]. This parasite appears to get onto food because of the use of contaminated irrigation water or sewage on the crop.
- Following the application of animal waste to land livestock can become infected or colonised by a range of pathogenic bacteria, viruses and parasites which can be subsequently transferred to the human population.
- The Microbiology of Water Working Party on Sewage Sludge (part of the Department of Environment Standing Committee of Analysts Working Group 2) has examined the significance of pathogens in sewage sludge in the UK. It identifies those micoorganisms found in the human and/or animal gastrointestinal tract that may persist for some time in digested sewage sludge and may be a hazard through direct contact. It acknowledged that the current Guidelines on the Agricultural Use of Sewage Sludge[6] are likely to reduce any potential risk to a minimum.
- EC Directives regulating the use of sewage on agricultural land may need revising in the light of recent outbreaks associated with fruit crops.
- There are few regulations concerning the disposal of farm wastes, blood and gut content from abattoirs and septic tank sludge to land other than that they do not "cause pollution to the environment, or harm to human health". These materials could also contain human pathogens that may be introduced into the soil by this disposal route.
- In the light of recent outbreaks of infections associated with foods which had been contaminated by sewage sludge or animals faeces and the recent evidence that human pathogens survive for long periods in sewage sludge spread on land, the regulations concerning these products should be reconsidered.

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1.9 AGRICULTURE COMMITTEE INQUIRY INTO THE POULTRY INDUSTRY (1993)

The Memorandum by the PHLS to the Agriculture Committee's deliberations on the Poultry Industry in 1993 stated in an overview that:

i. *Salmonella* infections continue to increase and the rise is due mainly to the continuing epidemic of *S.enteriditis* PT4. The source of this strain is almost exclusively poultry, especially chicken. Human infection arises from contaminated chicken meat and eggs. Because *S.enteriditis* PT4 is invasive in chickens the organism may be found within muscle which makes it more difficult to destroy during cooking. Another consequence of the systematic infection is the contamination of the contents of intact eggs. In flocks this leads to vertical transmission from breeder birds to their chicks, which is important epidemiologically. Internal contamination of the egg may allow *S.enteritidis* to survive cooking.

ii. Although it remains difficult to decide what proportion of human cases is caused by eggs as opposed to chicken meat; the number of outbreaks reported to be associated with eggs and egg products exceeds that associated with chicken meat. Only a small proportion of eggs are infected internally with *Salmonella* but because very large numbers of eggs are consumed daily, this is an important factor in public health. For imported eggs the overall *Salmonella* contamination rate is higher than in British eggs and a wider range of serotypes occurs. *S.enteritidis* PT4 is the commonest type contaminating British eggs and the proportion contaminated with this organism is higher than in imported eggs.

iii. Storage particularly at room temperature allows multiplication of *S.enteritidis* PT4 in the contents of eggs and high numbers of the bacteria may be produced. When contaminated eggs are broken out, or mixed, during food preparation aerosol production can contaminate surrounding surfaces. The heat resistance of *S.enteriditis* PT4 is increased when it is exposed to egg albumen.

iv. The control and prevention of *Salmonella* infection in poultry requires intervention measures at all levels of the production chain; this is primarily dependent on the work of the veterinary agencies and the poultry industry. The establishment of *S.enteriditis*-free breeder flocks would be an important method of control. Environmental measures must be aimed at preventing spread within flocks. Poultry feed should ideally be *Salmonella*-free.

v. Public health measures are important and must include education and advice on the thorough cooking of chicken meat, eggs and egg products. The PHLS strongly supports the advice first given by the Chief Medical Officer (CMO) in 1988 and subsequently endorsed by the ACMSF recommendation that "no-one" should eat raw eggs and vulnerable groups should eat only well-cooked eggs." To minimise multiplication during storage, eggs should be consumed within approximately 3 weeks of lay. "Date stamping" of individual eggs will facilitate this. As soon as possible after lay, eggs should be stored below 20°C and consumers should keep eggs in the refrigerator. In the kitchen, emphasis on good hygiene is essential to prevent cross-contamination of other food by uncooked chicken and eggs.

vi. Campylobacters have been the commonest reported bacterial cause of diarrhoea since 1981 in England and Wales, and since 1985 in Scotland. Their epidemiology differs from that of salmonellas. Campylobacters do not multiply at temperatures below 30°C; they do not grow readily in the presence of atmospheric oxygen; the infectious dose is usually low; person to person spread is probably uncommon; human infections peak at the end of May (salmonellas peak later); and common source outbreaks are reported less frequently. Although campylobacters are widespread in the environment and in domestic and wild birds and mammals, they are not major animal or poultry pathogens. Studies of retail broiler chickens have demonstrated contamination rates of between 30 per cent and 100 per cent often with very high levels of surface contamination.

vii. The sources and routes of transmission of *Campylobacter* infection are not fully understood, but there is microbiological and epidemiological evidence to suggest that chicken is a major source; transmission is either through consumption of undercooked chicken, or indirectly by cross-contamination of other foods in the kitchen. In contrast to salmonellas, egg-associated outbreaks have not been reported.

viii. In order to improve epidemilogical surveillance there is a need for improved systems to differentiate between and within species of *Campylobacter* and detailed fingerprinting techniques are required. The PHLS plans to establish a national reference laboratory for *Campylobacter* in line with the recommendation from the ACMSF Interim Report on *Campylobacter* published in September 1993. (The PHLS *Campylobacter* Reference Laboratory was set up in 1995).

Some of the measures designed to reduce salmonellas in the food chain may have a concomitant effect in reducing the load of campylobacters. The PHLS fully concurs with the recommendations given in the recent ACMSF Report.

There is little to suggest that the situation summarised above has changed significantly for the better since 1993.

SECTION 2

2. THE AGRICULTURE COMMITTEE INQUIRY INTO CURRENT ISSUES OF CONCERN RELATING TO FOOD SAFETY

2.1 INTRODUCTION

The Agriculture Committee is conducting an "inquiry into current issues of concern relating to food safety". The Committee is in particular seeking evidence on:

- Recent trends in the incidence of bacterial food poisoning in the UK, and the effectiveness of the system of notifying cases of food poisoning.
- Significant gaps in current scientific understanding of, and statistical information on, food safety issues, and measures which could be taken to reduce these gaps.
- The level of food safety risk at all stages of the human food chain, including:
    - on farm (agricultural practices, including use of feedingstuffs, agrochemicals and veterinary medicines);
    - in transit (the transportation of live animals, meat, animal products and other agricultural produce);
    - at slaughter (hygiene standards at abattoirs);
    - in the food processing industry;
    - in the food retail sector;
    - in the catering industry; and
    - in domestic households (including the adequacy of the provision of information to the general public on food safety matters through labelling and advice on the storage and preparation of food).
- The appropriateness of the methods and resources employed to minimise food safety risk at the various points of the food chain (these issues will be addressed within Section 4; Significant gaps in current scientific understanding of food safety issues).
- Any food safety implications of the presence of genetically-modified organisms in the human food chain, and the desirability and feasibility of labelling foodstuffs containing genetically-modified organisms (the PHLS response will not address this issue).
- Areas of food safety risk not considered in the Agriculture Committee's inquiry include:
    - the health implications associated with imported food (addressed in Section 1.5);
    - the health effects of land spread of sewage and sewage sludge of all types (addressed in Section 1.8); and
    - the burden of risk from animal feedstuffs including supplements and spray dried milk (addressed in Section 3.2.1).

SECTION 3

3. EVIDENCE

3.1 BACTERIAL FOOD POISONING IN ENGLAND AND WALES

3.1.1 THE EFFECTIVENESS OF NOTIFYING CASES OF FOOD POISONING

Food Poisoning Notifications

All doctors in clinical practice have a statutory duty to notify to the proper officer of the local authority cases, or suspected cases, of certain infectious diseases and of food poisoning. The meaning of the term food poisoning is not defined in the relevant legislation, the Public Health (Control of Diseases) Act 1984[1], and this has previously led to confusion as to which cases should be reported. The ACMSF recommended a definition which was accepted by the DH and circulated to all doctors in 1992. It defines food poisoning as: "any disease of an infectious or toxic nature caused by or thought to be caused by the consumption of food or water"[1]. The definition had been previously adopted by the World Health Organization (WHO)[2].

Notification is made by the attending clinician to the proper officer of the local authority (who in most cases is the Consultant in Communicable Disease Control; CCDC) where the incident occurred. Notification is not contingent on laboratory confirmation of infection and delaying notification until laboratory confirmation is available defeats the purpose of a rapid notification system designed to enable effective timely intervention at local level[3].

In addition to those cases of food poisoning formally notified by clinicians, the local authority ascertains cases by other means, for example, uncovered in the course of investigations of outbreaks or complaints by the general public. These notifications are collated locally and anonomised data on both formally notified and "otherwise ascertained" cases are forwarded as a legal requirement to the Registrar General at the Office of National Statistics (ONS) to produce the national food poisoning statistics (Public Health Regulations 1988)[4].

Food poisoning notifications are a very crude estimation of the true extent of the burden of ill health due to food poisoning as only a proportion of cases are notified. Since 1993 40 per cent of total notifications have been "otherwise ascertained" emphasising deficiencies in the system. Furthermore, many cases do not seek medical attention and others are seen by a clinician who fails to notify. It is likely that gross under-notification of food poisoning occurs as this is well documented for more serious infections[5–10].

The National Surveillance Scheme for Laboratory Confirmed Infections

The Communicable Disease Surveillance Centre (CDSC) is the central epidemiology unit of the PHLS. It routinely receives reports of laboratory confirmed human infections from the 49 local laboratories and the reference laboratories of the PHLS network and from over 200 NHS laboratories and a small number of private laboratories throughout England and Wales. In 1995 the Strategic Review of Pathology Services recommended that "all pathology contracts should refer to the necessity for prompt reporting of data relevant to the epidemiology of communicable disease, both to the CCDC and to the PHLS CDSC"[11]. Most of the PHLS and some of the NHS laboratories report weekly via electronic links[12]. The remaining laboratories send paper reports to CDSC where they are entered into the central database[13]. There are currently PHLS initiatives to have all laboratories reporting electronically.

Most initial human isolates of *Salmonella* from England and Wales are forwarded to LEP, which is the national *Salmonella* reference laboratory, for confirmation and further identification. *Salmonella* surveillance differs from other pathogens as the LEP has an electronic link with CDSC and the *Salmonella* figures are updated daily. In addition all laboratories in England and Wales are being encouraged to send isolates of *E.coli* O157 to LEP for further identification and definitive typing and the national returns on the incidence on O157 VTEC are based on LEP data. *B.cereus, Cl.perfringens, L.monocytogenes* and *S.aureus* are sent to the Food Hygiene Laboratory (FHL) for typing and/or toxin tests, and the national returns for these organisms are based on these FHL data.

The reports of laboratory confirmed gastrointestinal pathogens represent only a fraction of the true incidence of these pathogens as only a proportion of cases seek medical attention and only a subset of these have a sample submitted for analysis[14]. Not all of these will have a pathogen identified and not all pathogens identified are reported to CDSC. The exact proportion in each category is unclear and may vary for different organisms. Laboratory reports most likely represent patients with the severe end of the spectrum of diarrhoeal disease and are therefore not an unbiased sample.

Quality of information in laboratory reports to CDSC is dependent on the information included on the initial laboratory request form accompanying the specimen to the laboratory. There is no updating of reports and therefore data, particularly the case fatality data, are often incomplete. In addition the system does not distinguish between specimens originating from patients in hospital, or specimens referred by general practitioners or EHOs from patients in the community. The data do not include the patient's postcode, or area of residence, and the maps produced by CDSC are based on the geographic location of the laboratory.

Regional incidence rates produced by CDSC are based on the populations of the Regional Health Authorities in which the laboratories are located. However, laboratories in different regions vary greatly in their reporting efficiency with a concentration of poorly reporting laboratories in certain regions. In addition these rates assume that the patients reside in the same region as the laboratory which may not be correct. No data on negative specimens processed by each laboratory or the proportion of affected patients sampled are available at CDSC. As these may vary by region they can further distort the regional rates produced by CDSC[15].

The National Surveillance Scheme for General Outbreaks of Infectious Intestinal Disease

A general outbreak is defined as "an outbreak affecting members of more than one private residence or residents of an institution", distinct from family outbreaks affecting members of the same private residence only[16]. This surveillance system was developed by CDSC for England and Wales, in response to a recommendation by the Richmond Committee and introduced in 1992.

CDSC is made aware of possible general outbreakes of infectious intestinal disease (IID) from a variety of sources, including the national laboratory reporting scheme, consultants in communicable disease control (CsCDC), EHOs, microbiologists and others. A structured questionnaire is then dispatched to the appropriate CCDC with the request that the form is filled in by the lead investigator on completion of the outbreak investigation. There is no requirement for the investigator to co-operate as participation in the surveillance scheme is entirely voluntary. Analyses of data from this surveillance system have been reported in issues of the Communicable Disease Review[15, 17-18].

There are several areas of potential bias in the reporting of general outbreaks. Outbreaks at social functions affecting a defined cohort of people are more likely to be identified and investigated than those where cases are widely dispersed within the community such as those associated with contaminated product from retail or wholesale outlets[19]. It is left up to the reporting individual to decide the mode of transmission, and the faults likely to have contributed to the outbreak and different individuals can classify similar outbreaks differently[15]. Regional variations in the incidence of outbreaks may reflect a genuine difference but are more likely to reflect differences in laboratory interest, investigation policies, resources for communicable disease control and reporting to CDSC. Nationally there is no linkage between the notifications system and the laboratory reporting system.

Primary Care Surveillance

An additional source of data on IID in the community is the Royal College of General Practice (RCGP) Weekly Returns Service from its sentinel practice scheme. This provides information on weekly returns submitted by 99 general practices with a total population at risk of approximately 612,000. The data relate to episodes of newly acquired infectious intestinal disease. Microbiological confirmation of the clinical diagnosis is not required and not all cases will have resulted from food poisoning. However this may give an approximation of the presentation rate of cases of IID presenting in general practice.

The National Infectious Intestinal Disease Study

It is generally accepted that there is under reporting of food poisoning as many individuals fall ill but do not present to medical care and many who do present are not notified by the attending clinician. Similarly reports of laboratory confirmed infections represent only a subset of food poisoning cases since of those patients who attend a clinician only some will have faecal specimen requested, and others may submit a faecal specimen but the laboratory fails to identify the pathogen. The positivity rate varies between laboratories and depends on which specimens are examined for which pathogen and which methods are used to look for the pathogens; some laboratories are more efficient than others.

In response to a recommendation by the ACMSF, DH funded the National Infectious Intestinal Diseases Study, the aim of which is to estimate the numbers, agents, risk factors and socio-economic costs of cases of IID occurring in the community and presenting to General Practitioners. This study is a collaboration between Leeds PHL, PHLS reference laboratories, CDSC, the Centre for Applied Microbiological Research (CAMR), the Medical Research Council (MRC), and the London School of Hygiene and Tropical Medicine (LSHTM). Field and laboratory work has been completed and a report is being prepared for DH for the end of 1997.

The Development of a Standardised Enhanced Surveillance System for Dealing with Cases of Food Poisoning

There are two main routine sources of data on food poisoning available to local authorities. The first is the statutory notification system, in which clinicians notify the "proper officer" of their local authority of cases or suspected cases of food poisoning. The second is information from the laboratory on confirmed infections. In addition to the formal notification system and the laboratory reporting scheme, local authorities may ascertain cases by other means. For example, members of the public may make complaints or managers or proprietors of food businesses may inform the local authority of cases.

Investigation of known cases by EHOs provides valuable data on possible causes or sources of infection. However, the approach to dealing with food poisoning cases varies between Environmental Health Departments (EHDs) with some departments investigating all cases and others only a subset. Therefore, the data cannot be used to its full potential to the benefit of local and health authorities and it is difficult to make comparisons between Local Authorities when practices are not the same.

CDSC and the Scottish Centre for Infection and Environmental Health (SCIEH) are undertaking a study, funded by DH, to develop a comprehensive, standardised system for the investigation and reporting of cases of food poisoning. The main aim of the project is to ensure that routine approached to food poisoning cases and the information collected by different local authority EHDs is consistent and comparable to contribute to a better understanding of the routes and causes of food poisoning.

The first stage of the project involved a survey of all local authorities with regard to their approach to notified cases of food poisoning, the data they collect and their objectives for doing so. A questionnaire has been sent out to all EHDs to evaluate their practices for dealing with cases of food poisoning.

The second stage of the project involved the development of a standard approach to dealing with food poisoning cases with a new data collection form. This new system is being piloted in a number of volunteer local authorities across the country.

When the pilot is complete a report will be prepared for the DH to inform decisions on what data should be collected in the future, whether local practices in EHDs should be standardised and whether data collected locally should be collated and analysed regionally or centrally in the future.

Trends in the Incidence of Bacterial Food Poisoning

In a Welsh Office funded study, colleagues in CSDC (Wales) examined the so called "iceberg effect" (ie the idea that the proportion of notified and laboratory reported cases constitute only a small proportion of the total burden of morbidity)[20]. By comparing two general practices in South Wales who sampled all patients complaining of diarrhoea with two that sampled only according to their "routine management" they found an excess of campylobacters and viruses (SRSV, Rotavirus and Adenovirus) but no excess of salmonellas. Thus whereas increasing incidence of *Campylobacter* may reflect a greater readiness to submit stool specimens on the part of General Practitioners (GPs), routine clinical management did discriminate those individuals from whom a *Salmonella* was likely to be isolated. Thus the observed rise since the mid 1980s in salmonellosis is a real phenomenon.

The rise in statutory notifications of "food poisoning" is impossible to interpret. There is the suggestion that, since the adoption of the definition of the ACMSF of food poisoning as, "any disease of an infectious or toxic nature caused by or thought to be caused by the consumption of food or water"[16], the practice has grown up of reporting all *Campylobacter* isolations as food poisoning which was not customary before.

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3.1.2 Recent Trends in Incidence of Food Poisoning in England and Wales

Incidence of Food Poisoning in England and Wales

The total numbers of food poisoning cases in England and Wales suggest a rising trend (Table 1). In order to attempt to reduce the incidence of food poisoning a knowledge of which organisms are responsible for this rising trend is required.

3.1.2 **Table 1**

FOOD POISONING IN ENGLAND AND WALES 1986–1996

Annual Corrected Notifications England and Wales 1986–96*; Rates per 100,000 Population

Year	*Notifications*	*Rate per 100,000*
1986	23,948	47.74
1987	29,331	58.29
1988	39,713	78.66
1989	52,557	103.71
1990	52,145	102.51
1991	52,543	102.82
1992	63,347	123.54
1993	68,587	133.34
1994	81,833	158.53
1995	82,041	158.32
1996†	83,233	160.03

†, Provisional;*, Includes Port Health Authorities

Source: 1986 to 1994 annual MB2 monitors; 1995 to 1996 quarterly MB2 monitors ONS population estimates

Campylobacter spp.

(see also section 1.2)

Infections caused by *Campylobacter* spp. are the most common cause of foodborne disease in Britain. Laboratory reports show cases of infection by *Campylobacter* spp. to have risen in England and Wales during the early 1980s and 1990s, evelling off in the last few years (Table 2).

3.1.2 **Table 2**

CAMPYLOBACTER SPP.

Laboratory Reports to CDSC; Faecal Isolates for England and Wales 1986–97

Year	*Total*	*Rate per 100,000*
1986	24,809	49.46
1987	27,310	54.27
1988	28,761	56.97
1989	32,526	64.18
1990	34,552	67.92
1991	32,636	63.87
1992	38,552	75.18
1993	39,422	76.64
1994	44,414	86.04
1995	43,876	84.67
1996*	43,240	83.44
Jan-Jun 1997*	21,079	40.69

*, Provisional

Source: 1986–88 CDR annual tables (computer printout); 1989–96 Oracle computer report ONS Population estimates

Salmonella spp.

Salmonella food poisoning has long been a common cause of human illness in England and Wales (Table 3). There are over 2,200 different *Salmonella* serotypes but only about 200 serotypes occur in any one year in humans in England and Wales. In 1981 the LEP identified 10,251 strains of various serotypes from human infections. In 1993 the number had increased to 30,650. Phage typing of *S.enteritidis* shows that almost all the increase is due to *S.enteritidis* PT4 (Table 4) which in 1981 accounted for 4 per cent of all *Salmonella* isolates and peaked at 56 per cent of the isolates in 1993. This represents a 44-fold increase in *S.enteritidis* PT4 (from 395 to 17,257). During this time period the number of *S.typhimurium* cases increased slightly (from 3,992 to 4,778) and the number of infections due to other serotypes has remained relatively unchanged (from 5,172 to 5,618). Since 1986 the incidence of Salmonella food poisoning has increased markedly and a particular subtype of one of the many serotypes, *S.enteritidis* PT4, has been identified as responsible for the majority of infections (Fig. 1). The evidence collectively shows that the *S.enteritidis* epidemic is primarily due to infection in chickens, not only from surface and internal contamination of carcasses, but also from the contents of intact eggs[1-4]. The proportion of eggs infected internally is very low (approximately 1 per 1,000) but because very large numbers of eggs are consumed daily the number of human cases of infection nationally is large and represents an important challenge to public health. This was recognised in August 1988 when the Chief Medical Officer (CMO) of the DH in the UK issued advice to the public warning them of the risks associated with consuming raw or under-cooked eggs.

3.1.2

Table 3

SALMONELLA IN HUMANS

THE PHLS *Salmonella* DATASET FOR ENGLAND AND WALES 1986–97

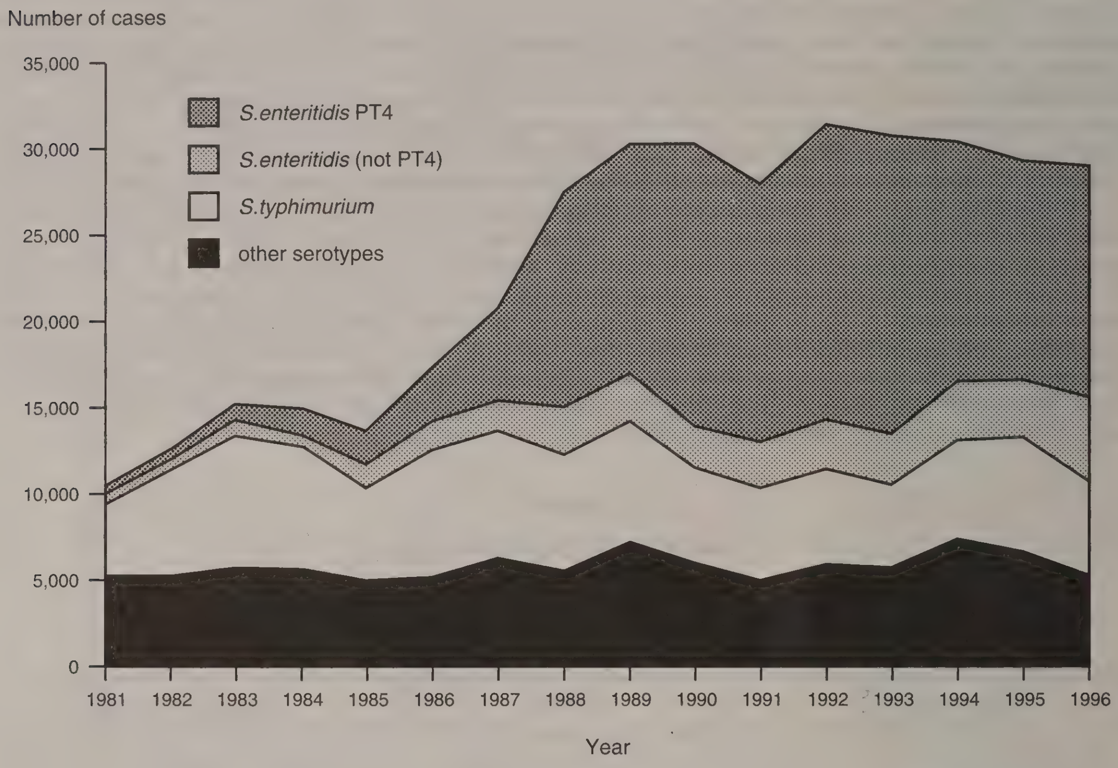
Year	*Total*	*Rate per 100,000*
1986	16,976	33.84
1987	20,532	40.80
1988	27,478	54.43
1989	29,998	59.19
1990	30,112	59.19
1991	27,693	54.19
1992	31,355	61.15
1993	30,650	59.58
1994	30,411	58.91
1995	29,314	56.57
1996*	29,111	56.18
Jan-Jun 1997*	11,655	22.50

*, Provisional

Source: LEP data: 1981–91[5], The PHLS *Salmonella* dataset: 1992 onwards.

ONS Population estimates

3.1.2 Fig 1: *Salmonella* in England and Wales 1981-1996



3.1.2

Table 4

SALMONELLA IN HUMANS

THE PHLS *Salmonella* DATASET FOR ENGLAND AND WALES 1981–97

Year	*S.typhimurium*	*S.enteritidis* *(all)*	*(PT4)*	*Other serotypes*	*Total*
1981	3,992(39)*	1,087(11)*	395(4)*	5,172(50)*	10,251*
1982	6,089(49)	1,101(9)	413(3)	5,132(42)	12,322
1983	7,785(51)	1,774(12)	823(5)	5,596(37)	15,155
1984	7,264(49)	2,071(14)	1,362(9)	5,392(37)	14,727
1985	5,478(41)	3,095(23)	1,771(13)	4,757(36)	13,330
1986	7,094(42)	4,771(28)	2,971(18)	5,111(30)	16,976
1987	7,660(37)	6,858(33)	4,962(24)	6,014(30)	20,532
1988	6,444(23)	15,427(56)	12,522(46)	5,607(20)	27,478
1989	7,306(24)	15,773(53)	12,931(43)	6,919(23)	29,998
1990	5,451(18)	18,840(63)	16,151(54)	5,821(19)	30,112
1991	5,331(19)	17,460(63)	14,693(53)	4,902(18)	27,693
1992	5,401(17)	20,094(64)	16,987(54)	5,860(19)	31,355
1993	4,778(16)	20,254(66)	17,257(56)	5,618(18)	30,650
1994	5,522(18)	17,371(57)	13,782(45)	7,518(25)	30,411
1995	6,743(23)	16,044(54)	12,482(42)	6,527(22)	29,314
1996*	5,573(19)	18,296(62)	13,184(45)	5,242(18)	29,111
Jan–Jun 1997*	2,085(18)	7,713(66)	5,322(46)	1,857(16)	11,655

*, Provisional; (percentage shown in brackets)

Source: LEP (formerly DEP) data: 1981–1991[5]; The PHLS Salmonella dataset: 1992 onwards

S.enteritidis PT4

Salmonella isolates referred to LEP represent only a proportion of all infections because not all patients consult a doctor and not all will have a faecal or other culture taken[6]. In England and Wales about 1 per cent of human *Salmonella* isolations identified by LEP (excluding *S.typhi* and *S.paratyphi*) are from blood (bacteraemia). The number of *S.enteritidis* PT4 isolations from blood has increased over the years but the percentage remains close to 1 per cent suggesting that this organism is not more invasive in man than the other food poisoning salmonellas. Patients with severe infections are more likely to be investigated and also to have a blood culture than patients with mild infections who may not even consult a doctor. Therefore the true proportion of *Salmonella* cases developing bacteraemia is likely to be lower than 1 per cent.

Age and sex specific incidence

Incidence rates of infection are highest in children under 10 with the highest rates in children under one (Table 5). This may reflect increased susceptibility but a proportion of the increase is likely to be due to these young children being brougnt to medical care and to have specimens submitted for examination.

3.1.2

Table 5

S.ENTERITIDIS PT4

AGE AND SEX-SPECIFIC INCIDENCE RATES PER 100,000 POPULATION ENGLAND AND WALES 1992–96

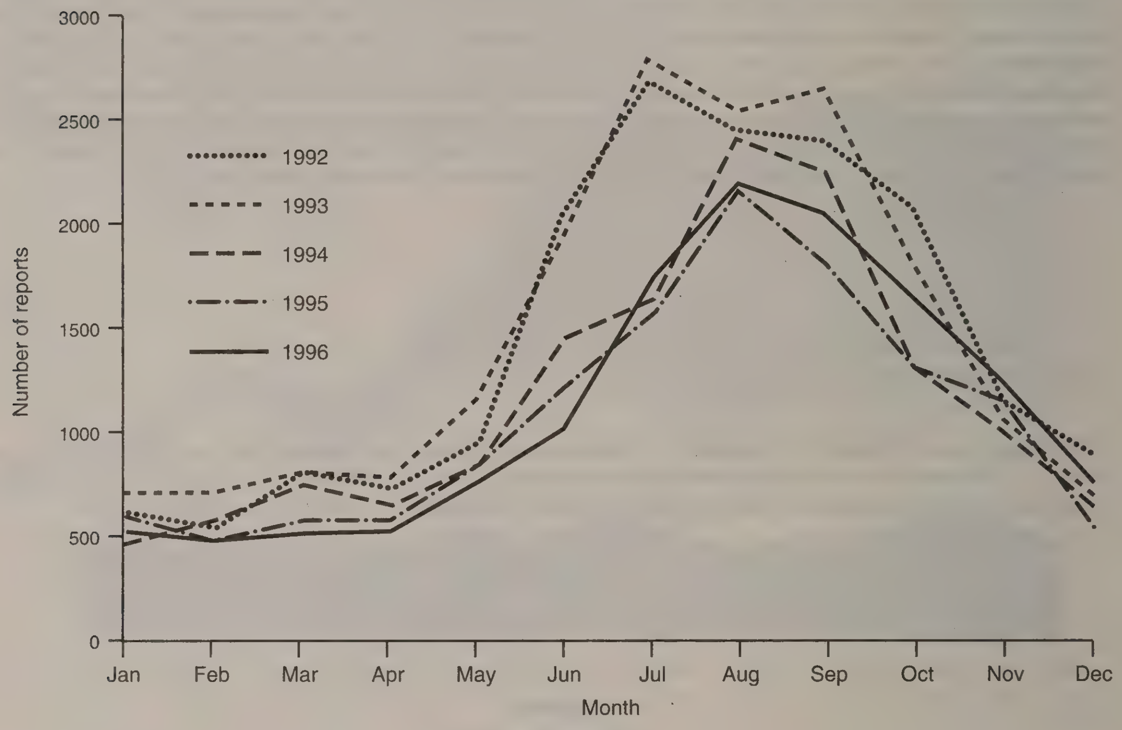
	Age Group						
Year/Sex	*<1 yr*	*1-4 yr*	*5-9 yr*	*10-14 yr*	*15-44 yr*	*45-64 yr*	*>65 yr*
1992							
Female	109	74	30	19	28	26	18
Male	122	76	31	23	29	22	15
1993							
Female	114	77	31	20	29	26	18
Male	98	78	31	23	30	24	17
1994							
Female	88	61	24	17	23	22	15
Male	93	58	24	19	25	19	14
1995							
Female	78	52	23	17	20	20	14
Male	83	49	28	18	21	18	14
1996							
Female	80	51	25	16	22	22	17
Male	76	51	27	20	23	21	16

Seasonality

S.enteritidis PT4 infections peak in the summer months (Fig. 2). This may result from the warm weather enabling *Salmonella* to multiply in conditions where food hygiene practices are poor, eg cross contamination, inadequate refrigeration or inadequate cooking. In addition people's eating habits are different in the summer months with more cold food being consumed, more buffets where food is left for long periods before consumption and more barbecues.

3.1.2 Fig 2: *S.enteritidis* PT4

All laboratory reports by month of report England and Wales 1992-1996



Travel

S.enteritidis PT4 cases are also associated with foreign travel eg in 1995 of 12,482 cases 950 (8 per cent) and in 1996 of 13,184 cases 754 (6 per cent) acquired their infection abroad. Most tourist destinations are involved and as *S.enteritidis* PT4 is a global problem the number of cases is usually related to the volume of tourists going to the destination. Those countries with warmer climates pose the greatest risk as the margin of safety is reduced when food hygiene standards are poor. In addition people eat out more on holidays and are therefore not in control of their own food preparation.

General outbreaks

Although a large number of cases of salmonellosis are reported annually most of our information linking food to illness comes from general outbreak data. General outbreaks are defined as "outbreaks affecting members of more than one private residence or residents of an institution"[7]. A minimum set of data is collected on all outbreaks including details of the setting in which the outbreak occurred, mode of transmission, causative pathogen, and details of laboratory and epidemiological investigations. Between 1992 and 1996 there were 73,692 reports of *S.enteritidis* PT4 in England and Wales of which 4,604 (5 per cent) arose from 395 general outbreaks. Reports unlinked to identified general outbreaks may be genuine sporadic cases, arise from family outbreaks or be associated with unrecognised or unreported outbreaks.

Between 1989 and 1996, 590 general outbreaks of *S.enteritidis* PT4 were reported to CDSC from England and Wales. At least 8,800 people were affected, 362 people were hospitalised and 27 died. The number of general outbreaks increased from 56 in 1989 to a peak of 108 in 1993 decreasing again to 56 in 1996. Table 6 shows the food vehicles implicated in outbreaks of *S.enteritidis* PT4. Food vehicles are pinpointed on the basis of microbiological evidence (the pathogen is isolated from the food), a statistically significant association between the consumption of food and illness (case control or cohort study) or strong circumstantial evidence. Poultry and eggs remain common vehicles of infection for *S.enteritidis* PT4 and it is likely that eggs may contribute to many outbreaks associated with sauces and desserts. In addition many of the foods classified under miscellaneous, such as quiches, may contain eggs[5]. This suggests that, despite the DH's advice, raw eggs are still being used in foodstuffs that are not subjected to sufficient heat to kill salmonellas.

Consumption of poultry meat

The consumption of poultry meat has increased dramatically in the UK from 16 kg per head in 1985 to 27.9 kg in 1996 (Fig. 3). A combination of factors has contributed to the increase, one being the decreasing price of poultry meat relative to other meat. A second factor may have resulted from the epidemic of Bovine Spongiform Encephalopathy (BSE) in British cattle which caused a decrease in the consumption of beef and a switch to other meats including poultry (Fig. 3).

3.1.2

Table 6

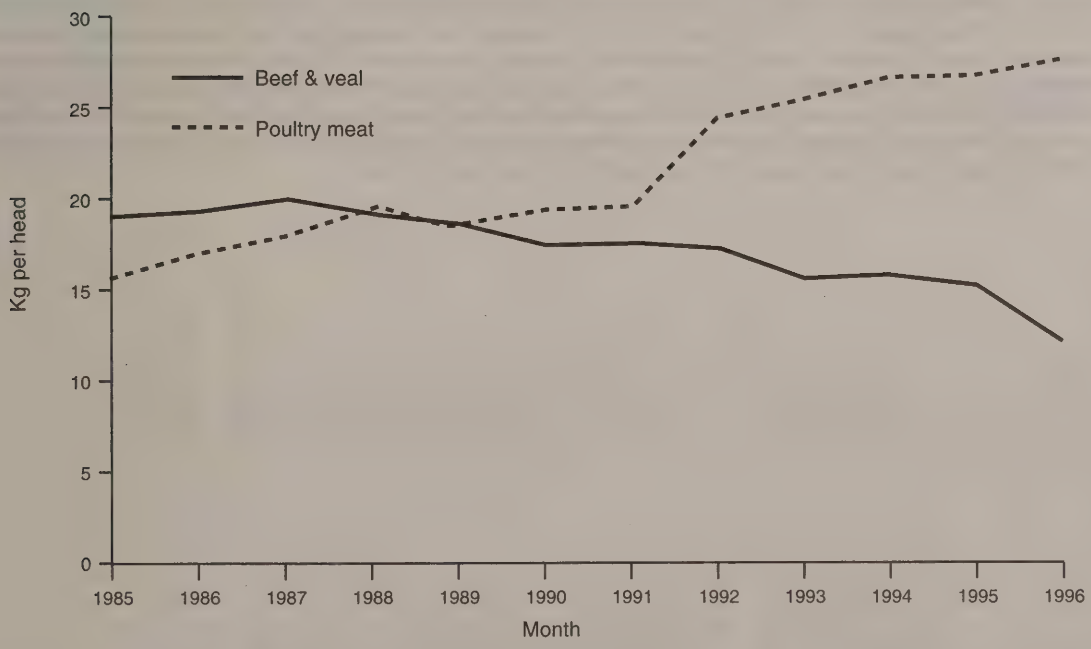
SUSPECTED FOOD VEHICLES REPORTED IN OUTBREAKS OF *S.ENTERITIDIS* PT4

ENGLAND AND WALES 1989–96

Food vehicle implicated	*Number of outbreaks*
Eggs and egg dishes	103
Deserts	98
Poultry	75
Red meat/meat products	39
Fish/shellfish	18
Salads/vegetables/fruit	17
Sauces	12
Milk/milk products	9
Miscellaneous food	130

3.1.2 Fig 3: Estimated per capita meat consumption in the United Kingdom

Total supplies of meat moving into human consumption divided by UK mid year population.
Source Meat & Livestock Commission.

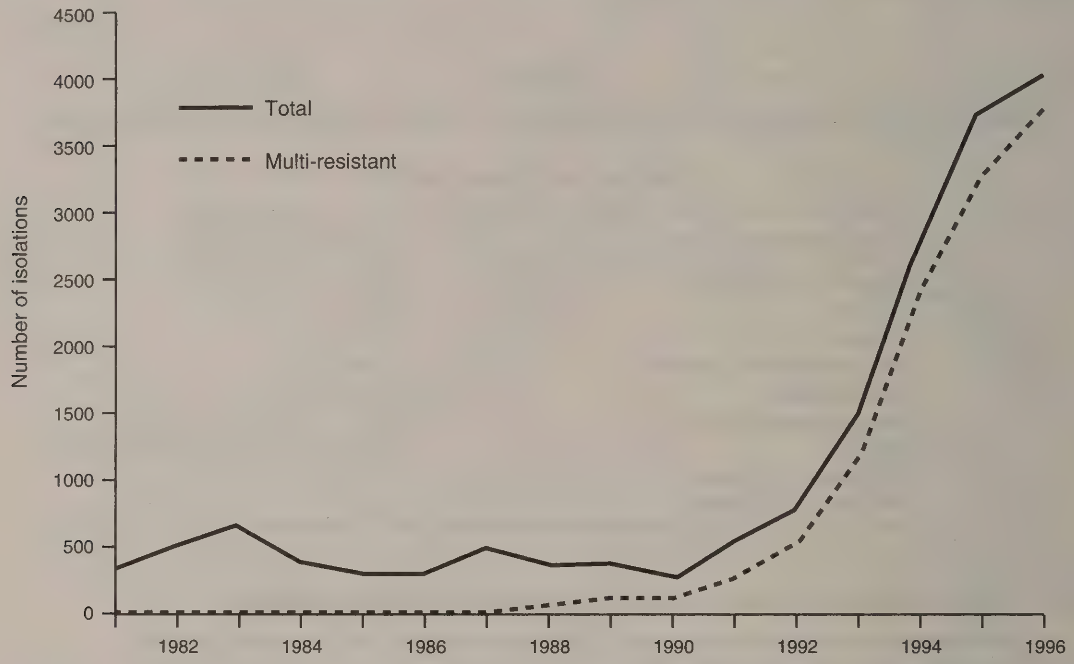


S.typhimurium DT104

(See also section 1.2—Emergence of foodborne pathogens).

The use of antibotics in animals and poultry as growth promoters, prophylaxis and treatment creates the opportunity to select *Salmonella* resistant to these antibiotics. Although the use of antibiotics as growth promoters has been banned in the UK increasing numbers of antibiotic resistant pathogens are being isolated from animals and from humans. Isolates referred to the LEP have increased progressively from 259 in 1990 to 2,873 in 1994 and 3,837 in 1995 and 4,006 in 1996[9]. Of particular importance is the increasing incidence of *S.typhimurium* DT104 of which 96 per cent are now multiresistant (Figure 4).

3.1.2 Figure 4: *Salmonella typhimurium* DT104 from humans



Between January 1992 and December 1996, 46 general outbreaks of *S.typhimurium* DT104 were reported to CDSC with most strains being resistant to at least five antibiotics (Tables 7 and 8). Seven hundred and eighteen people were affected, of whom 357 had laboratory-confirmed infections, 51 being admitted to hospital and there were five deaths. The number of affected individuals in each outbreak ranged from two to 200 with a modal number of six. The number of individuals at risk was reported in 24 outbreaks and the modal attack rate was 33 per cent (range 13–83 per cent). Seventy two per cent (33 out of 46) of outbreaks occurred between May and September with 26 per cent (12 out of 46) occurring in July. The duration of outbreaks varied between three and 48 days with the modal duration being four days (five outbreaks). Outbreaks occurred throughout England and Wales but were not evenly distributed according to population density, with an excess of outbreaks reported from the North and South-West.

3.1.2

Table 7

S. TYPHIMURIUM DT104; ENGLAND AND WALES 1992–95

DHA	*Location*	*Mode of Transmission*	*No. ill*	*Cases positive*	*Suspect vehicle*	*Evidence*	*R-Type*
N. Staffs	Residential institution	P	6	6	None	—	ACSSuT
Grimsby & Scunthorpe	Private house	F	25	6	Chicken drumsticks, Egg mayonnaise, tuna sandwich	S	Sensitive
Leeds	Indian takeaway	F	7	7	Onion, Kebabs	M + S	ACSSuT
Tameside	School	E	50	24	Cold meat	D	ACSSuT
Dorset	Retailer	F	2	1	Salami stick	M	ACSSuT
Rochdale	Retailer	F	20	18	Cooked chicken, ham sandwich	S	
N. W. Herts	School	F	4	3	Chicken drumsticks, ham & sausage rolls	D	ACSSuT
Exeter	Farm	O	3	3	None	—	ACSSuT
Tees Health	Public house/Restaurant	F	6	3	Roast pork	S	ACSSuT
Bradford	University	F	15	2	None	—	ACSSuT
Blackpool	Retailer	F	13	12	Chicken, turkey, beef & pork	D	ACSSuT
Cornwall	Private house	F	29	27	Tuna & salmon sandwiches, potato salad	S	Sensitive
Bedfordshire	Farm	F	26	26	Milk	M	ACSSuT
Leeds	Restaurant	F	6	5	Chicken dish	D	ACSSuT
W. Yorks	Farm	F	4	4	Milk	M + S	ACSSuT
E. London	Schools	F	7	7	Cod roll & cheese flan	D	ACSSuTTm
N. W. Surrey	Restaurant	F	22	4	Chicken drumsticks	S	Sensitive
East Riding	School	F	16	13	None	—	ACSSuT
Avon Health	Hotel	F	14	5	Coronation chicken, salad, coleslaw, potato egg mayonnaise, apple & sultana crumble	D	ACSSuT
Shropshire	Public house	F	16	11	Beef roll	S	ACSSuTTm
Bristol	Hospital	P	10	10	None	—	ACSSuT
Huntingdon	Hotel	F	48	44	Turkey	D	ACSSuTTm
E. London & City	Restaurant	F	33	18	Rice, pork and salad with crab sticks	D	ACSSuT
W. Yorks	Private house	F	20	4	Pork pie & sausage roll	D	ACSSuTTm
Plymouth & Torbay	Prison	OPF	200	27	Chicken	D	ACSSuT
Gloucester	Hotel	F	32	3	Sandwiches of ham, beef, turkey and cheese & tomato	D	SSuSP
Gwent	Hotel	F	48	28	Scotch eggs	S	ACSSuT
Somerset	Farm	O	3	3	Milk herd	M	ACSSuT
S of Tyne	Retailers	F	5	5	Cooked meats	D	ACSSuT
Manchester	Hospital	U	2	2	None	—	SSuTTm
E. Lancs	Farm	F	26	26	Milk unpasteurised	M	ACSSuT

3.1.2

Table 8

S. TYPHIMURIUM DT104; ENGLAND AND WALES 1996

DHA	*Location*	*Mode of Transmission*	*No. ill*	*Cases positive*	*Suspect vehicle*	*Evidence*	*R-Type*
North Cumbria	Farm	F	3	2	Unpasteurised milk	M	ACSSuT
Herefordshire	Hotel	F	10	3	Roast beef	D	ACSSuT
Wakefield	Restaurant	U	2	1	Chicken tikka	D	ACSSuTTm
Merton, Sutton & Wandsworth	Private house	F	51	18	Chicken with rice	S	ACSSuT
Dudley	Private House	F	14	10	Chicken drumsticks	S	ACSSuT ACSSuSTm
North Derbyshire	Residential institution	E	26	17	None	—	ACSSuT
Birmingham	Restaurant	F	16	11	Boiled rice	M	ACSSuT
Manchester	Public house	F	6	4	Roast Lamb	D	—
East Riding	Residential institution	E	3	3	Chicken	D	Sensitive
Cornwall & Isles of Scilly	Private house	O	3	3	Animal contact	M	ACSSuT
United Health	Hospital	U	2	2	None	—	—
Lincolnshire	Private house	F	9	5	None	—	—
Northallerton	Residential institution	P	23	7	None	—	ACSSuT
Wiltshire & Bath	Hospital	P	4	4	None	—	ACSSuT
North West Lancashire	Hotel	F	13	3	Turkey	D	ACSSuTNxCp
East Riding	Retailer	E	12	6	Prawn mayonnaise sandwich	M	—

M, Microbiological; D, Descriptive; S, Statistical; F, Food; U, Unknown; E, Environmental; O, Other; P, Person-to-person.

R-Type, Antibiotic resistance-type; A, ampicillin; C, chloramphenicol; S, streptomycin; Su, sulphonamides; T, tetracyclines; N, neomycin; Cp, ciprofloxacin; Tm, trimethoprim.

The majority of outbreaks are of *S.typhimurium* DT104 are foodborne (Table 9).

3.1.2

Table 9

MODES OF TRANSMISSION OF OUTBREAKS OF *S.TYPHIMURIUM* DT104 IN ENGLAND AND WALES

1992–96 (N = 46)

Mode of transmission	*Number of outbreaks*
Foodborne	32
Animal contact	3
Person-to-person	4
Animal contact + person-to-person + foodborne	1
Foodborne + person-to-person	3
Unknown	3

Foodborne outbreaks

In 30 of the 32 foodborne outbreaks of *S.typhimurium* DT104 a specific food was suspected to be the vehicle of infection. In five this was based on identifying the pathogen in the food, in nine there was a statistically significant association between consumption of food and illness, in two the pathogen was identified in the food and there was a statistically significant association between consumption of food and illness. In the remaining 14 outbreaks a food was implicated on the basis of descriptive epidemiology (strong circumstantial evidence). Foods implicated in outbreaks include chicken drumsticks, tuna and salmon sandwiches, ham, cod roll, scotch eggs, turkey, unpasteurised milk, pork pies, roast beef, apple and sultana crumble and coleslaw. This diverse range of contaminated foods illustrates the difficulties of controlling the spread of infection. Foods may be contaminated before they arrive in the kitchen (meat and poultry products) or cross-contaminated after arrival as a result of bad kitchen practices. In 22 of the 32 foodborne outbreaks a fault contributing to the outbreak was identified. In 10 of these one fault was reported, in six two faults, in five three faults and in one four faults. The commonest faults were cross-contamination, followed by inappropriate storage/refrigeration and inadequate heat treatment of the food.

The outbreak in December 1996 associated with the consumption of turkey in which one case died was the first general outbreak reported with a ciprofloxacin-resistant strain of *S.typhimurium* DT104. As the related fluoroquinolone antibiotic eurofloxacin is widely used in turkey flocks this may be the first of many such outbreaks.

Outbreaks of E.coli O157 in England and Wales 1987–96

(See also Section 1.2—Emergence of foodborne pathogens).

There is a rising trend in the number of outbreaks of O157 VTEC infection in England and Wales (Table 11). Analysis of outbreak data shows that patients with O157 VTEC infection are 20 times as likely to be admitted to hospital than those with other IID, the case fatality rate for O157 VTEC infection is 37 times that for other IIDs.

3.1.2

Table 10

VT—PRODUCING *E.COLI* O157

STRAINS EXAMINED BY PHLS LEP; ISOLATIONS FROM HUMANS FOR ENGLAND AND WALES 1991–97

Year	*Total*	*Rate per 100,000*
1991	361	0.71
1992	470	0.92
1993	385	0.75
1994	411	0.80
1995	792	1.53
1996*	660	1.27
Jan—Jun 1997*	304	0.59

* , Provisional

Most outbreaks are likely to be foodborne in origin although confirmatory microbiological evidence is rarely available. Cross-contamination of cold cooked meats and other ready-to-eat foods is thought to be an important cause of outbreaks of O157 VTEC infection in England and Wales. Cross-contamination has been identified as a problem in butchers' shops selling both raw meat and ready-to-eat foods, and also in catering establishments, where a variety of foods can become contaminated if strict hygiene standards are not maintained. Few outbreaks of O157 VTEC infection have been shown to be associated with the undercooking of minced beef products in England and Wales.

Person-to-person spread of disease has been shown to be important in institutional settings, especially in nurseries and residential homes for the elderly. Disease can also be acquired through contact with livestock on farms. In recent years there have been an increasing number of outbreaks and sporadic cases of 0157 VTEC infection where livestock have been shown to be the source of infection (Table 11). In particular, small outbreaks have been associated with visits to open farms where children are encouraged to handle the animals such as calves, lambs and goats.

L.monocytogenes

The number of cases of listeriosis in England and Wales rose rapidly after 1986, peaking between 1987–89 (Table 12). However, this peak was associated with contaminated imported paté. Following withdrawal of this product the number of cases declined and have remained at an annual rate similar to that reported for the early 1980s.

Incidence of Gastrointestinal Infections in England and Wales; 1996 to 1997

The total numbers of food poisoning cases in England and Wales have risen significantly during 1997 compared to the same period in 1996. Figures for formally notified and ascertained cases of food poisoning to week 40 in 1997 are 73,240 compared to 64,039 to week 40 in 1996. The incidence of O157 VTEC has increased by 65 per cent up to week 40 in 1997 compared to the same period in 1996 (Table 13). Also of concern, is the rise in incidence of *S.enteritidis* PT6 (46 per cent) in 1997 compared to the same period in 1996.

3.1.2

Table 11

OUTBREAKS OF O157 VTEC INFECTION IN ENGLAND AND WALES 1987–96

Year	*Health Region*	*Setting*	*No. of cases (deaths)*	*Possible route of transmission*
1987	West Midlands	Community	26	Turkey roll sandwiches
1988	East Anglia	Community	49(1)	Raw potatoes
1989	Oxford	Community	8	
1990	Wales	Psychogeriatric hospital	4	Person-to-person
	Yorkshire	Youth custody centre	7	
	Oxford	Playgroup	7	
1991	NW England	Fast food restaurant	23	Beefburgers
	Oxford	School trip	6	
	NW England	Community	17	Yoghurt
	Wales	Nursery	10	Person-to-person
1992	NW England	Psychiatric hospital	14(3)	Person-to-person
	Trent	Nursing home	5(2)	
	Oxford	Nursery	37	
	Trent	Public house	19(1)	Food
	Wessex	Scout camp	3	Food
	Northern	Community	4	Cold cooked meat
1993	Trent	Community	7	Raw milk
	W Midlands	Function	9	Beef
	Various	Community	4	
	SW Thames	Community	7(1)	Paddling pool
	W Midlands	Community	4	Barbecue
	Yorkshire	Community	17	
	Wales	Butcher's shop	6	Meat
1994	Various	Foreign travel (Majorca)	5	
	Trent	Open farm	7	Animal contact
	Mersey	Nursery	12	Person-to-person
	W Midlands	Community	3	
	Northern	Nursing home	7(2)	Person-to-person
1995	Wessex	Community/hospital	26	Sandwiches
	NE Thames	Hotel	5	Food

Year	*Health Region*	*Setting*	*No. of cases (deaths)*	*Possible route of transmission*
	NW England	Residential home	3(3)	Person-to-person
	Northern	Butcher's shop	12(1)	Meat
	Northern	Restaurant	5	Salads
	East Anglia	Holiday camp	4(1)	
	Wales	Nursery/community	49	Person-to-person
	W Midlands	Butcher's shop	11	Meat
	Various	Community	3	
	Northern	Nursery	4	Person-to-person
	SW England	Farm	4	
1996	Trent	Butcher's shop	5	Meat
	Yorkshire	Community	4	Raw milk
	Trent	Community	4	
	NW Thames	Canteen	3	Cooked meat
	SW England	Holiday camp	2	Mixed food
	Northern	Community	4	
	W Midlands	College	7	Mixed food
	SW England	Nursery	4	Person-to-person
	Trent	Butcher's shop	5	Meat
	Wessex	Prison	5	Food
	SW England	Community	6	
	NW England	Community	12	Milk
	Trent	Community	4	

Source: PHLS

3.1.2

Table 12

HUMAN LISTERIOSIS IN ENGLAND AND WALES: 1983–96

Year	*Non-pregnancy associated cases*	*Pregnancy associated cases*	*Total*
1983	67	44	111
1984	77	35	112
1985	77	59	136
1986	87	42	129
1987	136	102	238
1988	164	114	278
1989	123	114	237
1990	91	25	116
1991	94	33	127
1992	81	25	106
1993	85	17	102
1994	87	25	112
1995*	78	7	85
1996*	99	17	116

*, Provisional

Source: Laboratory reports to the PHLS CDSC and strains sent to the FHL for confirmation and typing. Reports are by date of specimen. Mothers and babies are counted as one case.

3.1.2

Table 13

GASTROINTESTINAL INFECTIONS, ENGLAND & WALES: 1996 & 1997 (PROVISIONAL)

	Cumulative totals for weeks 01–40		
Laboratory reports	*1996*	*1997*	*Percentage change*
All Salmonellas	21,349	20,842	–2
S.enteritidis	13,206	14,429	+9
S.enteritidis PT4	9,694	9,816	+1
S.enteritidis PT6	678	988	+46
S.typhimurium	4,353	3,386	–22
S.typhimurium DT104	2,976	2,153	–28
S.virchow	931	434	–53
S.virchow PT26	411	139	–66
Campylobacter	33,378	38,899	+17
E.coli O157*	475	785	+65
Sh.sonnei	952	1,228	+29
Rotavirus	13,408	14,144	+5
SRSV	2,010	1,279	–36
Cryptosporidium	2,933	3,142	+7
Giardia	3,990	3,818	–4

Outbreaks in Infectious Intestinal Disease

Most IID outbreaks during 1992 to 1996 were caused by small round structured viruses (SRSV) (50 per cent; 1013/2027). *Salmonella* spp. accounted for 31 per cent (636/2027) outbreaks of IID in England and Wales during this period, of which 62 per cent (395/636) were caused by *S.enteritidis* PT4 (Table 14). *Cl.perfringens* was implicated in 7 per cent, Rotavirus in 4 per cent, *Sh.sonnei* in 2.5 per cent, O157 VTEC in 2 per cent, *Cryptosporidium* in 2 per cent, and *Campylobacter* in 1.5 per cent of IID outbreaks.

3.1.2

Table 14

LABORATORY REPORTS OF GASTROINTESTINAL PATHOGENS COMPARED WITH REPORTS ASSOCIATED WITH GENERAL OUTBREAKS OF INFECTIOUS INTESTINAL DISEASE IN ENGLAND AND WALES 1992–96

Organism	*Number of laboratory reports*	*Laboratory confirmed cases in general outbreaks (%)*	*Number of outbreaks*
All salmonellas	150,841	7,812(5)	636
S.enteritidis PT4	73,692	4,604(6)	395
S.enteritidis other PTs	18,476	1,073(6)	75
S.typhimurium	28,017	1,059(4)	97
S.virchow	8,816	322(4)	20
Other *Salmonella* spp.	21,840	754(3)	49
Campylobacter	209,504	290(0.1)	31
Rotavirus	78,621	372(0.5)	83
Sh.sonnei	33,882	601(2)	50
Cryptosporidium	23,828	1,016(4)	34
SRSV	8,759	2,898(33)	1,013
Cl.perfringens	2,878	683(24)	137
E.coli O157	2,718	197(7)	43

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3.2 FOOD SAFETY RISK ASSOCIATED WITH ALL STAGES OF THE HUMAN FOOD CHAIN

3.2.1 FOOD SAFETY RISK ON THE FARM

(See also Section 1.8—Public health implications of sewerage sludge disposal to land).

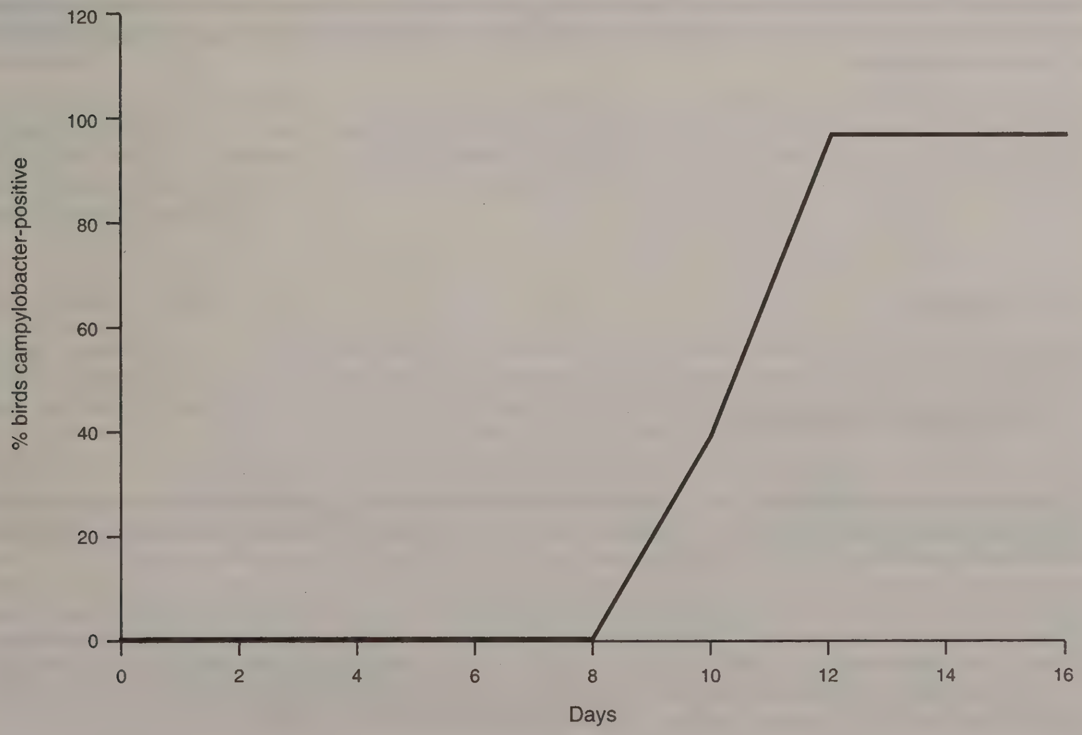
Effect of Farm/Agricultural Practices (Poultry)

The majority (c 75 per cent) of poultry meat flocks in the UK are colonised with *Campylobacter* spp[1]. The often intensive nature of this production means potential human pathogens, such as *Campylobacter,* are capable of rapid spread through a flock (Fig 1). The principal source of campylobacters in poultry flocks is the environment around the broiler house, and farms with poor hygiene were found to be significantly more likely to produce *Campylobacter*-positive flocks than those with good hygiene[1].

Organisms are introduced into the flock on the boots or clothes of farm workers. If workers either change their clothing and/or dip their footwear in strong disinfectant *Campylobacter* colonisation can either be prevented or delayed. In three collaborative trials with UK poultry processors dipping either prevented colonisation until slaughter at six weeks of age or delayed colonisation by two or three weeks[1].

The invasive nature of the bacterium[2] means that vertical transmission from infected breeding flocks is important in the epidemiology of *S.enteritidis* infection in broiler chickens and in egg-laying hens (Table 1). These data were obtained from naturally infected commercial flocks in England and Wales. The European Union Zoonoses Directive focuses on infection in breeding flocks and this should help to reduce vertical transmission. Neither vertical transmission nor contaminated feed are important in the colonisation of chickens with *Campylobacter*[1]. This is because few strains, if any, of *Campylobacter* are invasive in chickens under normal commercial conditions. *Campylobacter* spp are also very sensitive to drying[3] and if present die rapidly in poultry feed. (See also Section 1.9—Overview of the PHLS submission to the Agriculture Committee Inquiry into the Poultry Industry (1993)).

3.2.1 Fig 1: Speed of spread of *Campylobacter* through a broiler flock



3.2.1

Table 1

RELATIONSHIP BETWEEN *S.ENTERITIDIS* INFECTION IN BROILER-BREEDER BIRDS AND THE ISOLATION OF THE ORGANISM FROM THEIR BROILER PROGENY

1. Multiple farm study

Salmonella *status of breeder flocks*	*No of broiler of flocks positive for* S enteritidis/No examined
S.enteritidis-positive	13/15
S.enteritidis-negative	0/7

2. Single farm study—September 1992–April 1993

Broiler flock No	S.enteritidis *status of breeder flock supplying chicks*	S.enteritidis *status of flock*
1	+	+
2	+	+
3	+	+
4	–	–
5	–	–

Effect of Farm/Agricultural Practices (Milk Production)

Raw milk is an important vehicle for *Campylobacter* infection and, to a lesser extent, for *Salmonella.* Most dairy cows are *Campylobacter*-positive. The animals appear to acquire the bacteria by drinking contaminated natural waters[4]. Once colonised the animals remain positive for life, although there may be seasonal variation in levels in the intestine.

Role of Feedingstuffs

— *Contamination of feedingstuffs*

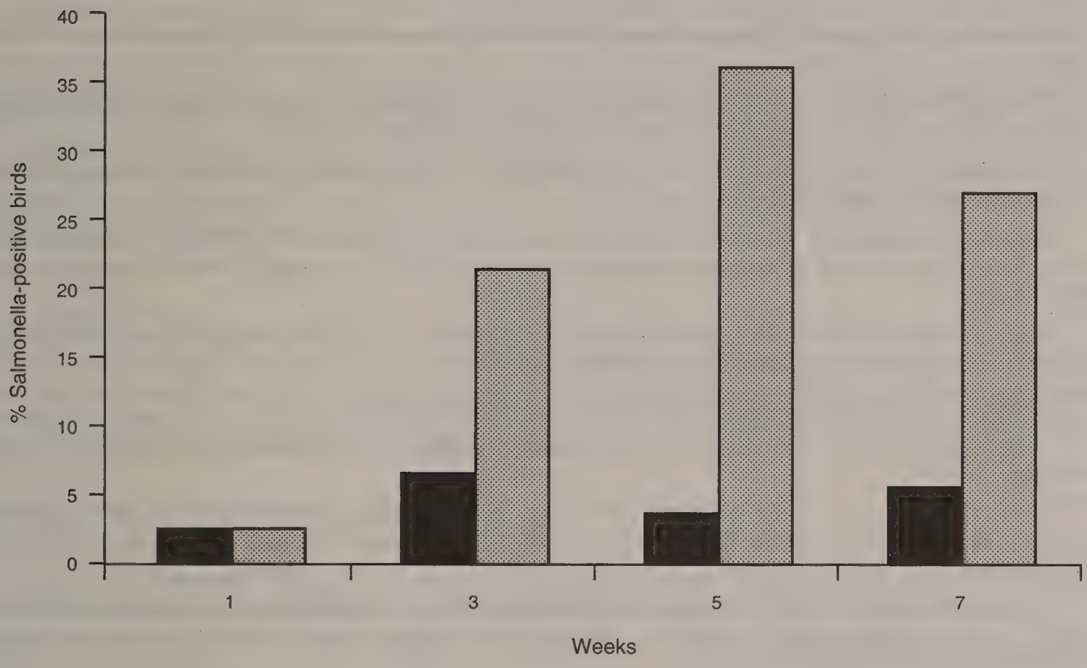
Contaminated feedingstuffs are an important source of *Salmonella* infection in poultry. Although heat processing of feed should be sufficient to destroy salmonellas, feed can become re-contaminated, particularly on the farm by rodents, wild birds, feral cats etc.

The incorporation of organic acids such as formic and/or propionic acid can minimise the effects of *Salmonella*-contaminated feed[5]. Acid treatment of feed was also found to limit the spread of *S.enteritidis* PT4 in a young broiler flock naturally infected by vertical transmission from infected breeder birds (Fig.2). This treatment had no effect, however, on the *Campylobacter* status of the study flock.

It is the advice of the PHLS that, in common with human ready-to-eat food, there should be a requirement that all animal feedingstuffs, including supplements and spray-dried milk powders, should be free from *Salmonella.*

3.2.1 Fig 2: Effect of treatment of feed with organic acids on the spread of *S.enteritidis*

Black bars show data from birds given acid-treated food. Shaded bars show data from control birds.



— *Growth Promotors and Vancomycin Resistant Enterococci*

Over the last two decades enterococci have risen in importance and are now amongst the commonest organisms causing hospital-acquired infection[6,7]. There is particular concern because strains have emerged which are resistant to almost all the effective antibiotics, notably the glycopeptides such as vancomycin and teicoplanin[6,8].

A particular area of controversy has been the possible role of the growth promoter glycopeptide agent avoparcin in the dissemination of these strains[9-13]. The agent was first licensed in Europe in 1975. Its use in feedingstuffs has been associated with the isolation of glycopeptide-resistant enterococci from poultry and pigs in Germany and Denmark[14,15]. Similarly, resistant enterococci have been isolated from farm animals and meat products in the UK[16-18].

Spread of VTEC including O157

Direct spread of O157 VTEC from farms to humans has been well documented by showing the same subtype is recoverable from human cases and livestock (cattle, sheep, goats, dogs and horses)[19-21]. On occasions this has occurred on "open" farms (ie farms that are run as visitors' attractions). The infection can be foodborne where children on farm visits consume food without washing their hands adequately[22].

The PHLS is studying the risk of on-farm spread in a DH funded study of a representative cohort of some 600 farmworkers and rural dwellers in Herefordshire, Lancashire and Norfolk. Serological surveillance of this group for evidence of 0157 VTEC infection in the past is being carried out and faeces will be examined for all VTEC. This cohort was established in Herefordshire and Lancashire in 1992 and Norfolk in 1995–96 under a phase of the study funded by the Health and Safety Executive (HSE)[23]. Detailed information on animal contact is available as well as exposure to other potential risk factors. For example 48 per cent drink unpasteurised milk (a proportion which rises to nearly 100 per cent for dairy farmers) and 33 per cent drinking water from private (ie non-mains) supplies.

(See also Section 1.2—Emergence of foodborne pathogens).

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3.2.2 FOOD SAFETY RISKS ASSOCIATED WITH TRANSIT

Live Animals in Transit

The stress of transportation of animals from either farm or market to the slaughterhouse can lead to the recrudescence of latent *Salmonella* infections[1]. Salmonellas have been demonstrated to spread rapidly in animals during transport and also in the lairage prior to slaughter[1]. The prevalence of *Salmonella*-positive lamb carcasses was found to be related to the length of time the animals were held before they were killed[2]. It is likely that similar data would be obtained with other food animals.

It is common practice in the UK for broiler chickens to be taken from the farm to the processing plant in transport crates. These crates can hold between 20–30 birds and often have only been subject to a cursory washing procedure. PHLS studies have isolated both salmonellas and campylobacters from crate washing water and washed crates. Birds can be in the crates for many hours. Studies have shown this can be stressful which will increase the likelihood that *Campylobacter*-positive birds will excrete higher numbers of the bacterium and that previously negative birds will be surface-contaminated and/or colonised[3]. Recent DH funded research in the PHLS has found that campylobacters on transport crates can be isolated from processed carcasses even when birds were negative for these subtypes on the farm. This is being examined in detail in further DH funded work.

VTEC including 0157

It has been suggested that starvation increases rumenal proliferation and shedding of VTEC[4]. Since animals are not generally fed in transit to the slaughterhouse and since the number of slaughterhouses in the UK has been reduced of recent years, thereby increasing the time taken to get to slaughter, this may in turn increase the potential for contamination of animals at slaughter.

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3.2.3 FOOD SAFETY RISK ASSOCIATED WITH SLAUGHTER

Poultry Processing Plants

Poultry slaughter can be very intensive with some modern plants processing up to 200 birds per minute. The major emphasis has been on speed and cost-effectiveness with the prevention of cross-contamination appearing to be less important. The incidence of carcase contamination with salmonellas, and to a lesser extent campylobacters, often exceeds that of infection in the live bird[1–5]. Cross-contamination can occur at many points on the slaughter line but certain stages are of particular concern. PHLS research has concentrated on immersion scalding where feathers are loosened prior to mechanical plucking[3–5]. In most UK processing plants water temperature is between 50–52°C and it is often *Campylobacter*- and *Salmonella*-positive (Table 1). The scalding process can also serve to attach pathogenic bacteria to chicken skin[6].

Campylobacter[7-8] and *S.enteritidis* PT4[7] have been isolated from chicken muscle. This may be associated with the invasiveness of *S.enteritidis* PT4[9] but it is also possible that bacteria in scald tank water enter exposed blood vessels in a manner similar to that shown for *Cl.perfringens*[10]. Undercooked chicken meat is an important vehicle in *Campylobacter* [11] and *S.enteritidis* PT4 infection[12]. The PHLS explored control measures which might improve scalding hygiene. One of these was to maintain scald water at an alkaline pH. This reduced the contamination rate of scald tank water with campylobacters and salmonellas (Table 1) and had some effect on reducing carcase contamination rates, particularly with campylobacter, although differences from normal scalding regimens were not significant (Table 2).

The intensity of pouty processing creates problems for control and it is a generally held view in the scientific community that intervention is best exercised on the farm.

3.2.3

Table 1

SALMONELLAS AND CAMPYLOBACTERS IN SCALD TANK WATER

	Normal scalding	*NaOH* added to water*	*Significance level of difference*
Mean pH (±S.E¶)	6.4 ± 0.3	9.18 ± 0.27	
No of *Campylobacter* positive samples†	12	4	<0.01
No of *Salmonella* positive samples†	15	4	<0.001
Mean *Campylobacter* MPN§±SE/100ml‡	82.3±69.1	1.5±0.6	<0.05
Mean *Salmonella* MPN± SE/100ml‡	13.9±13.4	3.0±2.3	<0.05

*, NaOH; sodium hydroxide 15.3 mol/l solution added; ¶, SE, standard error; †, 15 sets of samples examined per scalding regimen; ‡, Of positive samples only; §, MPN, Most probable number.

3.2.3

Table 2

INCIDENCE OF SALMONELLA AND CAMPYLOBACTER CONTAMINATION ON CHICKEN CARCASSES

	% Carcasses positive (±SE¶)	
Scalding regimen	*Salmonella*	*Campylobacter*
Low pH (6-7)	68.6±26.8	54.9±38.6
High pH (9.0)	74.2±17.6	23.2±34.0

¶, SE, standard error.

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3.2.4 FOOD SAFETY RISK ASSOCIATED WITH THE FOOD PROCESSING INDUSTRY

(See also Section 1.5, page 24—The significance of imported foods to food safety)

Contaminated Raw Materials

At the present time in England and Wales approximately 30 per cent of raw chicken carcasses are contaminated with salmonellas and approximately 75 per cent are Campylobacter-positive. Chicken carcasses may also carry very high numbers of Campylobacter[1] (Table 1). Thus food processes which use chicken meat as a raw ingredient may be compromised by such contamination.

It is well established that the handling of chicken and other raw products can lead to widespread dissemination of campylobacters and salmonellas in the immediate environment[2-3]. Campylobacters survive only poorly, however, and persist for only a short time on dry surfaces[4]. This is not the case with salmonellas and some strains have been shown to be extremely persistent in a variety of food matrices. The homogenisation/mixing of raw egg will also lead to the widespread dissemination of salmonellas when egg contents are heavily contaminated[5].

3.2.4 **Table 1**

CAMPYLOBACTER CONTAMINATION LEVELS ON UK-PRODUCED CHICKENS FROM RETAIL OUTLETS

*Contamination levels per carcase**	*Number of carcasses (%)*	
<1,000	13	(19.4)
1-10,000	14	(20.9)
10,001-50,000	10	(14.9)
50,001-100,000	8	(11.9)
100,001-1,000,000	20	(29.9)
>1,000,000	2	(3.0)

*Contamination levels determined by a rinse method which would not have removed all campylobacters attached to the skin of the carcase.

Special Problems Associated with the Dairy Industry

— *Use of Raw Milk or Thermised Milk for Manufacture of Cheese*

Raw milk from cows, sheep or goats is frequently contaminated with pathogenic organisms such as *Salmonella, L.monocytogenes* and O157 VTEC and it is an ideal growth medium for all of these. It is unsafe for the manufacture of cheese and has been implicated in numerous outbreaks of food poisoning associated with cheese both overseas and in this country[6]. There is also increasing reliance on the use of thermisation (heat-treatment at sub-pasteurising temperatures) to reduce numbers of spoilage organisms in stored milk prior to manufacture into cheese. Thermisation does not eliminate pathogenic bacteria and is therefore not a safe process[6].

In some countries maturation of cheese for more than 60 days is mandatory if the cheese is made from unpasteurised milk and it is widely believed that pathogenic organisms cannot survive this length of time in storage. There is published experimental and outbreak evidence to show that *Salmonella, L.monocytogenes* and O157 VTEC may survive for considerably longer than 60 days in some cheeses[6]. The recent outbreak of *S.goldcoast* infections in England in December 1996 was traced to consumption of cheddar cheese that had been in storage for more than 60 days.

A recent paper by the Institute of Food Science and Technology (IFST)[7] advocated that only pasteurised milk should be used for cheese production, which is contrary to the view expressed by the Specialist Cheesemakers Association[8].

However, there are many published reports of outbreaks where the implicated pathogen has been found in cheese and subsequently in raw milk from the same source for example an outbreak of Streptococcus zooepidemicus associated with home-made cheese in New Mexico in 1983[9], an outbreak of infection with *S.dublin* in England and Wales in 1989 associated with Irish soft cheese[10], and a large outbreak of reportedly *S.paratyphi* B infection in France in 1993 associated with goats' milk cheese[11]. This organism was subsequently identified as *S.java,* and not *S.paratyphi* B (B Rowe, pers. comm.) The recent introduction of highly discriminatory molecular methods of typing has provided a means for demonstrating that the isolates from the milk, the cheese, and the victims of the outbreaks are indistinguishable from one another.

— *Inadequate Pasteurisation*

Pasteurisation is the most important critical control point for manufacture of safe liquid milk or milk products but faulty plant, incorrect operation of the plant or recontamination of pasteurised milk with raw milk have been recurrent and documented causes of outbreaks of food poisoning throughout the world[12]. Incorrect operation of plant in particular is frequently implicated in outbreaks and some large manufacturers have introduced fully automated equipment that cannot be overridden by the operator. However most large dairies and on-farm pasteurising plants in the UK depend on correct operator control. In England in 1996 inadequate pasteurisation was implicated in an outbreak of *E.coli* 0157 infection associated with milk and the 1996 outbreak of *S.goldcoast* infection associated with cheddar cheese.

— *Spray Dried Milk*

Salmonella infection has been documented in association with spray dried powdered milk on many occasions since the mid 1960s. Investigations in the USA in 1967 demonstrated that problems arose because of inadequate pasteurisation of raw milk prior to concentrating and spray drying. It was shown that no heat treatment later in the process was sufficient to destroy Salmonella, in spite of the very high air temperatures in the spray drier. Also, because of the heat stress within the drier, seams and crevices opened up and allowed caked contaminated material to accumulate. Subsequent investigations in other parts of the world have shown that cracks and even holes may form in the lining metal of the drier and allow milk containing salmonella to gain access to the insulating material and become a continuing source of contamination for subsequent batches of spray dried milk. Similarly contamination often occurs in the optional "instantising" system which follows drying, because of difficulties in cleaning this equipment[12].

Although this information has been available for over 30 years and this mechanism has been documented in Australia, North America, Trinidad and the UK, outbreaks due to spray dried milk continue to occur[12]. The level of contamination is usually low so outbreaks tend to be associated with consumption of infant formula by babies. In the UK in 1985 an outbreak of infection with *S.ealing* in babies was traced to an English brand of dried infant milk[13]. In January 1997 an international outbreak of *S.anatum* was first recognised by LEP and traced to infant milk manufactured in France[14]. Another outbreak of infection with *S.java* phage type (PT) "Worksop" in England in July 1997 was traced to consumption of an English brand of fortified liquid "toddler milk" which has now been withdrawn from the market[15].

— *Sale of Unpasteurised "Green top" Liquid Milk for Drinking*

Although legislation has limited the sale of unpasteurised milk for drinking to farm milk rounds and farm-gate sales, raw milk continues to be a cause of outbreaks of food poisoning in England and Wales (Table 2).

A PHLS study has examined the microbiological quality of 1,097 "Green top" milks collected from 242 retail outlets in Wales, Trent, Wessex, North and North West, South West and South East of England during the period from May 1996 to end of July 1997. The results have shown that a significant proportion (20 per cent) of the samples was of unsatisfactory microbiological quality and failed the standards prescribed by the Dairy Products (Hygiene) Regulations 1995. Far more worrying was the finding of significant pathogens (*Salmonella, Campylobacter, E.coli* O157, *Staphylococcus aureus* ($>10^2$ organisms/ml) and haemolytic streptococci) in 41 of 1,097 (4 per cent) of samples which came from 28 of 242 (12 per cent) of outlets. These results provide further evidence to support the advice from the Advisory Committee on the Microbiological Safety of Food that "the sale of raw milk to consumers for direct consumption should be banned in England, Wales and Northern Ireland, as it is in Scotland"[16].

— *Labelling Regulations*

The law regarding labelling of milk products as incorporated within the Dairy Products (Hygiene) Regulations 1995 requires that detailed labels are attached to the outside of the bulk wrapping of the cheese as they leave the manufacturer.

It does not apply to cheeses on retail sale. Consequently there is no requirement for retailers to advise the public whether or not cheeses have been manufactured from raw cows' milk, although the manufacturer should supply the information to the retailer. In addition the Regulations do not include any requirement regarding products made from raw milk from ewes, goats or buffaloes. In a recent survey of the microbiological quality of soft cheese performed by the PHLS, 1,431 soft cheeses were purchased from retail outlets[17]. Of these 72 specified that they were raw milk cheeses and 405 specified that they were made from pasteurised milk. Nine hundred and sixty cheeses (67 per cent) were unlabelled and it was not possible to determine whether or not they were made from raw milk. This is unsatisfactory.

3.2.4

Table 2

MILK AND MILK PRODUCTS ASSOCIATED OUTBREAKS AND INCIDENTS OF INFECTION; REPORTS TO CDSC, ENGLAND AND WALES 1990–96

Year	*Organism*	*Vehicle of infection*	*Number of outbreaks*	*Number of persons infected*	*Evidence*
1990†	*Salmonella typhimurium*	Raw milk	1	3	—
	Campylobacter	Raw milk	2	11	—
1991†	*Salmonella:*				
	dublin	Raw milk	1	26	—
	anatum	Raw milk	1	3	—
	enteritidis	Ice cream	3	7	—
	E.coli O157	Unpasteurised yoghurt	1	16	—
	Campylobacter	Raw milk	1	4	—
	Campylobacter	Bird-pecked bottled milk	1	11	—
1992†	*Salmonella:*				
	enteritidis PT4	Ice cream	1	25	D
	enteritidis PT4	School milk*	1	44	S
	Campylobacter	Pasteurised milk	1	110	S
	Campylobacter	Pasteurised milk	1	72	S
1993	*Salmonella:*				
	enteritidis PT4	Ice cream	1	7	S
	typhimurium DT193	Raw milk	1	13	M, S
	E.coli O157	Raw milk	1	11	M
	Campylobacters	Raw milk	1	22	D
1994	*Salmonella:*				
	typhimurium DT12	Raw milk	1	11	M
	typhimurium DT104	Raw milk	1	4	M, S
	typhimurium DT104	Pasteurised milk	1	26	M
	Campylobacter	Raw milk	1	23	S
	Str.zooepidemicus	Raw milk	1	4	M
1995	*Salmonella:*				
	typhimurium DT104	Raw milk	1	26	M
	Campylobacter	Raw and pasteurised milk	1	35	S
1996	*Salmonella:*				
	typhimurium DT104	Raw milk	1	5	M
	goldcoast	Cheese	1	75	M, S
	E.coli O157	Pasteurised milk	1	6	M
	E.coli O157	Pasturised milk	1	12	D

M, Microbiological; S, Statistical; D, Descriptive
† *Campylobacter:* a number of incidents attributed to bird-pecked bottled milk were recorded
* Not known whether raw or pasteurised
Source: PHLS CDSC.

The purchaser should be given the information to decide whether or not to buy a raw milk cheese.

Reducing Risks within Food Processing, Catering and Retail Sectors by Implementation of HACCP

There is a general consensus that the way to improve standards in all sectors of food industry is to introduce quality control based on a hazard analysis of critical control points (HACCP). Many sectors of the food industry have therefore introduced HACCP systems which involve careful risk analysis and detailed documentation at all stages of the production process. There is a danger, however, that HACCP can become a complicated and time consuming paper exercise and that personnel document faults in a process but do not take steps to correct the faults or prevent onward distribution of a food that has failed a critical control point.

Outbreaks have been traced back to food produced by processors that have detailed HACCP systems in place. The recent outbreak of infection with *S.goldcoast* is a good example of a producer with a full HACCP system in place who failed to respond when faults were identified in the manufacturing process, eg thermograph readings below pasteurisation temperatures and phosphatase failures.

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3.2.5 FOOD SAFETY RISK ASSOCIATED WITH THE RETAIL FOOD SECTOR

(See also Section 1.6, page 27—The role of national surveillance in the assessment of food safety)

Cross-contamination

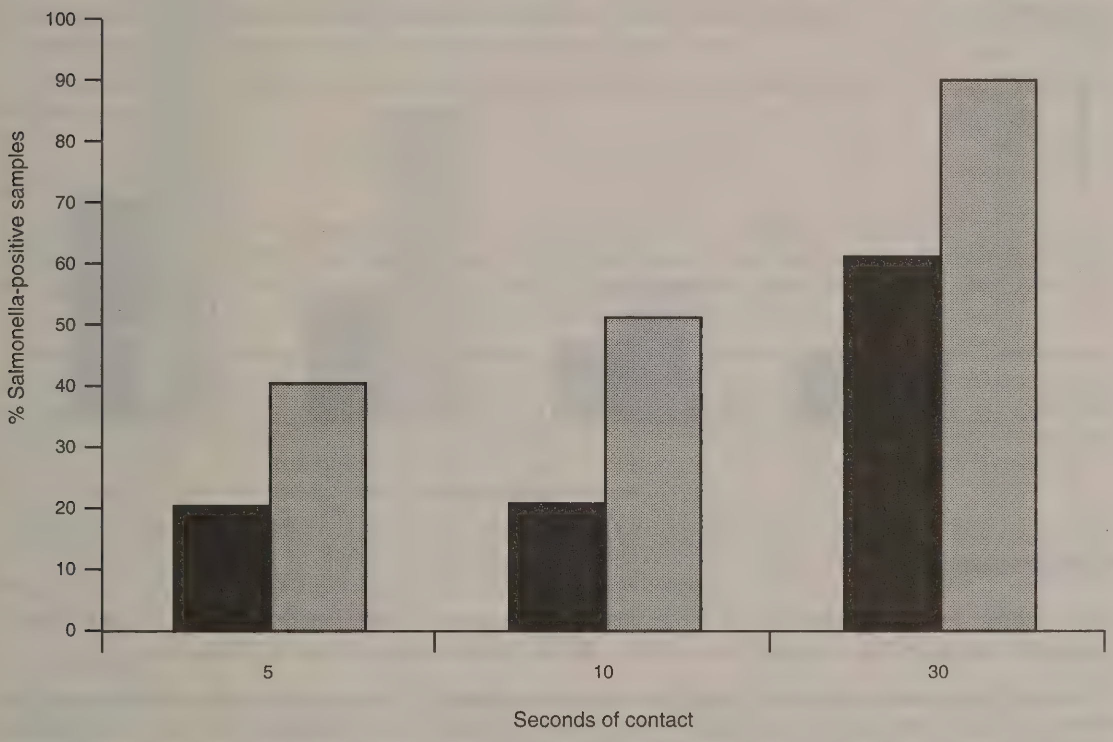
The comments in this section are relevant to cross-contamination whether it occurs in retail outlets, in catering or in domestic households (ie Sections 3.2.6, 3.2.7).

Studies in the Netherlands have demonstrated that the handling of chicken carcasses in the kitchen can lead to extensive cross-contamination with *Salmonella* and *Campylobacter*[1]. PHLS studies have found that the handling of chicken carcasses in the kitchens of commercial caterers will also lead to the dissemination of campylobacters[2].

Cooking procedures which involve the homogenisation of eggs can lead to extensive contamination of the kitchen if egg contents are heavily contaminated with salmonellas[3]. Salmonellas are capable of prolonged survival in egg smears or droplets[3] and other materials (see below) on kitchen surfaces. The transfer of salmonellas from surface to food can take place very rapidly[4] (Fig. 1) and once salmonellas are on a food, growth can be rapid even at ambient temperature[4] (Fig. 2).

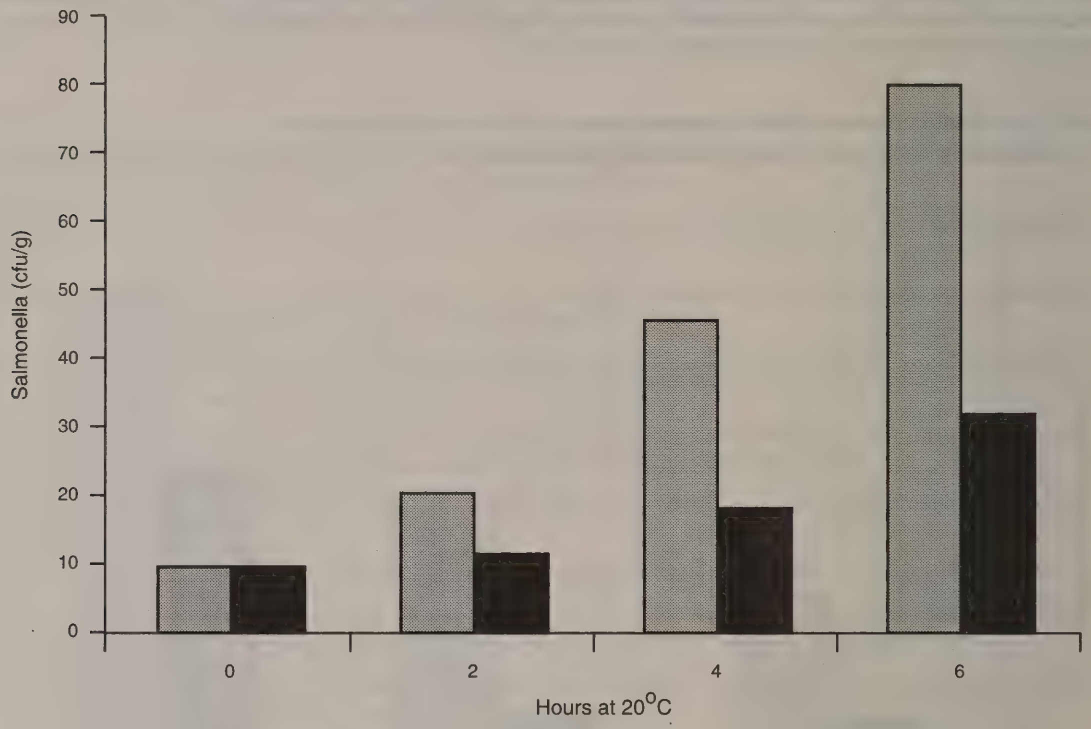
3.2.5 Fig 1: Contamination of foods following contact with contaminated surfaces

Black bars show data on beef, shaded bars show data on melon. Foods placed on dried egg droplets.



3.2.5 Fig 2: Growth of two *S.enteritidis* PT4 isolated on melon at 20°C

Shaded bars show growth of a tolerant/virulent isolate. Black bars show growth of a sensitive isolate.



Cooking Processes

The proper cooking/processing of foodstuffs is an important food safety measure. Cooked and/or processed foods are often identified in outbreaks of either *Salmonella* or *E.coli* 0157 infection.

Salmonellas are able to attach to freshly exposed muscle tissues[5]. Attachment significantly increases heat tolerance (Table 1) and may permit the survival of the bacteria where cooking is not complete. Recent PHLS work has also found that when sausages were cooked from frozen according to the manufacturers' instructions salmonellas could be isolated from the fully cooked product (Table 2).

3.2.5

Table 1

THE IMPACT OF ATTACHMENT TO PORK MUSCLE TISSUE ON HEAT TOLERANCE OF ISOLATES OF *S.TYPHIMURIUM* DT104*

Expt. No.	*Isolate Code*	*D (58°C) value (min)*		*% Survivors after 3 min at 58°C*†	
		Free cells	*Attached cells*	*Free cells*	*Attached cells*
1	2	1.6	12.1	0.9	66.0
2	2	2.1	6.1	3.8	36.2
3	47	2.5	9.1	1.6	30.2
4	10	2.0	11.2	1.2	42.0
5	47	3.6	5.5	6.0	30.0
6	10	3.9	5.8	7.8	28.6
7	47	2.2	9.2	2.0	52.0
8	10	3.0	10.0	1.1	60.0
Mean values ± S.E.¶		2.61 ± 0.3	8.6 ± 0.9	3.1 ± 0.9	43 ± 5:1

*, Using a paired t test and values from all experiments attached cells were significantly more tolerant ($p < 0.001$) than free cells.

†, Cells were at 55°C or above for at least 5 min; ¶, S.E., standard error.

3.2.5

Table 2

SURVIVAL OF *S.TYPHIMURIUM* DT104 *IN SAUSAGES COOKED FROM FROZEN**

	No. of sausages Salmonella positive/No. cooked	
	Cooking time†	
Inoculum/g sausage	*12 min*	*14 min*
500	2/2	1/2
15	2/2	0/2

*, Sausages were purchased fresh, inoculated with *Salmonella,* frozen overnight and then cooked. Sausages from the same batch were tested and found to be *Salmonella*-negative.

†, Packs of sausages which are to be cooked from frozen state that they should be cooked for between 10-12 minutes.

Refrigeration and Storage

It is generally accepted that salmonellas are unable to grow at temperatures below 7°C. The same was thought to be true of *E.coli.* Recent work from the USA has shown, however, that an isolate of *E.coli* O157 could grow slowly at 4°C in laboratory media containing sodium lactate[6]. Recent PHLS work has shown that it may also be necessary to re-evaluate the impact of extended refrigerated storage on salmonellas.

Certain strains of *S.enteritidis* PT4 and *S.typhimurium* DT104 show marked increases in size during storage for longer than seven days in laboratory media at 4°C[7] and cells can exceed 100µ in length (salmonellas are usually 1–2µ in length). It would seem that cells can continue to increase in size but not divide. Once such filaments are warmed they may rapidly divide into many daughter cells. The significance of these observations have yet to be fully evaluated but the ability to grow in this way is not confined to either *S.enteritidis* or *S.typhimurium* DT104. It is also found in other *Salmonella* serotypes.

There is an increasing trend towards the consumption of refrigerated foods and foods with longer shelf lives. Work is in progress to determine whether salmonellas can undergo marked increases in size in foodstuffs. (See Section 1.1—Infectious dose of foodborne pathogens).

Food Handlers

(see Section 1.7—The role of food handlers in outbreaks of foodborne infection).

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3.2.6 FOOD SAFETY RISK ASSOCIATED WITH THE CATERING INDUSTRY

(See also Section 1.7—The role of food handlers in outbreaks of foodborne infection.)

Palmer and colleagues[1], in a community study of foodborne infection in South Wales, showed that salmonellas or *Campylobacter* were three times as likely in subjects giving a history of eating out when compared with those who did not. Similar risks were found by Parry and colleagues at CDSC (Wales) and the LEP, in a study of sporadic O157 VTEC in Wales (data submitted for publication).

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3.2.7 FOOD SAFETY RISK ASSOCIATED WITH DOMESTIC HOUSEHOLDS

(See also Section 1.7—The role of food handlers in outbreaks of foodborne infection).

Outbreaks associated with catering in domestic premises were shown to be independently more likely than outbreaks in other settings to be associated with salmonellas, inappropriate storage of food, and consumption of poultry, eggs, or sauces[1]. Cross-contamination, inadequate heating of food, and infected food handlers were other contributory factors associated with outbreaks in domestic premises.

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3.3 APPROPRIATENESS OF METHODS EMPLOYED TO MINIMISE FOOD SAFETY RISK AT EACH STAGE OF THE FOOD CHAIN

The PHLS recognise that intervention is appropriate at all stages of the food chain from farm to fork.

Poultry

With *Campylobacter* and *Salmonella* in poultry and *S.enteritidis* in eggs, intervention is most appropriate on the farm. *Campylobacter* colonisation of broiler chickens may be largely controlled by improved farm hygiene and biosecurity[1]. *Salmonella* in broiler chickens can be brought under control by the removal of infected breeding flocks, improved biosecurity which would include proper cleaning and disinfection of houses between flocks, proper and effective rodent control, *Salmonella*-free feed and a strict limitation of the number of visitors to the farm.

Vaccination of breeding flocks is an important potential control measure in both egg and poultry meat production. Other measures such as competitive exclusion, where broiler chicks are dosed with a bacterial culture derived from a *Salmonella*-free adult bird, can protect the birds against *Salmonella* infection[2]. Young broiler chickens often contain a caecal microflora which inhibits *Campylobacter*[3]. Application of these bacteria to growing broiler flocks may prevent colonisation[4] although this has yet to be fully investigated.

The intensity of poultry processing militates against intervention. Methods have been developed as alternatives to immersion scalding[5] but these are expensive and are unlikely to be adopted at the present time.

Other Food Animals

All food animals can be colonised with/infected by potential foodborne pathogens. *Campylobacter* spp., such as *C.jejuni* and *C.coli,* can be isolated from cattle, sheep and pigs.

The bacteria can also be recovered from red meat samples but at a lower prevalence than with poultry. It would not appear possible to exclude *Campylobacter* spp. from the above animals, particularly where they have access to the natural environment. The epidemiology of O157 VTEC in red meat animals is not yet sufficiently well understood to enable control measures on the farm to be identified.

Salmonella infections of economic importance to the farming industry have resulted in the development of vaccines which have been used to control infections by salmonellas such as *S.dublin.* The principal point of control with red meat-associated foodborne pathogens is the slaughterhouse where the proper application of hygiene can reduce carcase contamination.

Control during Catering

PHLS outbreak investigations have made it possible to identify the most important contributory factors in outbreaks of foodborne disease (see Sections 3.2.6 and 3.2.7). Storage of foods at temperatures which permit the growth of bacteria and cross-contamination from raw to cooked food are important. The application of proper catering hygiene and HACCP would do much to reduce the incidence of foodborne disease (see Section 3.2.4).

Surveillance

Examination of foods for the presence of potentially pathogenic bacteria is an important part of industry- and Government-funded surveillance activity. Intervention measures also require that their efficacy is tested by examination of samples for pathogenic bacteria. The demand for and importance of surveillance data has meant that studies are undertaken often without an ideal methodology being identified. Bacteria such as *Salmonella, Campylobacter* and O157 VTEC will be damaged by exposure to extra-intestinal environments common in food production. Such damage is often referred to as sub-lethal injury and is characterised by sensitivity to selective agents or incubation conditions to which the undamaged cells are resistant[6]. The isolation of food poisoning pathogens is reliant upon their resistance to certain selective agents and if this is impaired isolation will be compromised. On a practical level this means that some previous surveys may have underestimated the prevalence of contaminated products.

Much PHLS activity is directed towards the optimisation of isolation methods for *Salmonella, Campylobacter* and O157 VTEC. Although these are very different pathogents there is a commonality of cell injury. It is anticipated that greatly improved/optimal methods will be available within the next two years. The PHLS will be using standardised methodologies for food examination and will be doing all that is possible to improve technique sensitivity and specificity.

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3.4 Appropriateness of Resources to Minimise Food Safety Risk

It is the view of the food producers with whom the PHLS collaborates that profit margins are often not sufficient to fully fund food safety intervention measures. This may be exacerbated by the aggressive competition between the major food retailers which serves to keep the price of poultry meat and eggs, for example, at a low level.

Poultry meat hygiene could be improved by: lower stocking densities in broiler houses, longer delays between flock clearance and house refilling, reduced throughput during processing. These measures, however, would increase the cost of poultry meat.

In milk production, the price paid to the farmer is linked, in part, to microbiological quality. There is an argument that meat producers should be rewarded for producing raw meat products low in/free from potential human pathogens.

SECTION 4

4. Significant Gaps in Current Scientific Understanding of Food Safety Issues

Areas in which the PHLS feels there is inadequate information, gaps in understanding or the opportunity to improve food safety include:

4.1 Agriculture Practices

1. The health risks associated with the increasing use of land spread for the disposal of sewage and sewage sludge are largely unknown.

2. The potential of antibiotic transfer, by VRE contamination of raw meats, between human and animal populations requires further investigation:

3. The relationship between the serotypes of *Campylobacter* isolated from animals and poultry, and those responsible for human infection is unknown.

4. It should no longer be acceptable for animal feeds of any sort, or feed supplements including spray-dried milk, to be contaminated with *Salmonella.*

5. The health risks associated with "open farms" and farm visits need to be assessed.

4.2 ANIMALS IN TRANSIT

1. The effect of transit time and transport facilitates on animal stress and levels of excretion of *Salmonella, Campylobacter* and *E. coli* O157 need further investigation.

2. Hygiene practices with regard to transport lorries, packing crates etc, need to be reviewed with the objective of reducing the risk of cross-contamination.

4.3 ANIMALS AT SLAUGHTER

1. Mechanisms to reduce the levels of cross-contamination which occurs in slaughter houses and poultry processing plants need further development.

2. The safe disposal of waste from slaughter houses needs to be assured.

4.4 FOOD PROCESSING

1. Effective methods for decontamination of meat and poultry requires further investigation.

2. There needs to be a more effective system for tracing back to their source UK-produced and imported foods implicated as causes of human disease.

3. Greater attention needs to be paid to the risks associated with the importation of foods from third countries.

4. Laboratories carrying out quality assurance work for commerical companies should be required to operate to the same scientific standards as those in the public sector.

4.5 CATERING

1. Hygiene practices with regard to catering facilities, food handlers etc., need to be reviewed with the objective of reaching those directly involved in food preparation thereby reducing the risk of inadequate storage and cross-contamination.

4.6 RETAIL

1. Improved labelling is required to ensure that the customer is made aware when purchasing uncooked or partially cooked meat-based products, or cheeses made from unpasteurised milk.

2. Labelling of all wrapped food sold at retail or to caterers should be sufficiently detailed to allow trace back to the producer should the food be implicated in an outbreak of infection.

3. Clearer instructions are required on the safe storage and cooking of products sold at retail.

4.7 DOMESTIC FOOD SAFETY

1. The temperatures of domestic refrigerators and deep freezers are critical factors in the control of food poisoning in the home. The installation of thermometers into all new equipment and/or alarms set to activate when the temperature becomes critical would greatly improve domestic food safety.

4.8 EPIDEMIOLOGY AND CLINICAL ASPECTS OF BACTERIAL ENTERIC PATHOGENS

1. *Campylobacter* spp

- The virulence mechanisms of *Campylobacter* spp are poorly understood and it is possible that not all strains are equally virulent. This may have epidemiological implications and these virulence studies need to be related to reference laboratory typing.
- There is only limited information on species other than *C.jejuni* and *C.coli* as human pathogens. Studies of *Campylobacter* spp throughout the food chain require further investigation.
- The role of the recently established PHLS *Campylobacter* Reference Unit should be maximised. This should allow the incidence of sporadic cases and outbreaks caused by *Campylobacter* spp to be determined.

- A survey of *Campylobacter* spp in a range of foods has been proposed and the results of this study will be compared with the serotypes most frequently associated with human infections.
- Comprehensive surveillance information on antimicrobial resistance in *Campylobacter* spp is not available to the level provided for *Salmonella* spp and this needs to be addressed.

2. VTEC—one of the most important areas for further research is VTEC and particularly *E.coli* O157. In the PHLS this is the highest priority due to the severe disease caused by these organisms.

- Improved detection methods are required in order to assess the importance of non-O157 VTEC.
- Studies of virulence mechanisms, other then VT production, may provide information on those strains that are likely to be human pathogens.
- Non-O157 VTEC are commonly found in foods of animal origin. Further information is needed on the epidemiology of VTEC in food animals as well as at all stages of food production.
- The area of treatment of VTEC infections with antimicrobials is controversial and will be investigated further.
- It is not understood at present why certain individuals with VTEC infection develop severe conditions such as HUS while others with the same strain may be asymptomatic.

3. *Salmonella* spp.

- Further work is required to investigate factors contributing to host specificity and also to further our understanding of the contribution of antibiotic resistance to the persistence and spread of certain epidemic strains in food animals and food.
- A wide range of PCR-based methods is now available for the detection of salmonellas in food and a critical evaluation of these is also urgently required.

4. Development of reliable rapid methods, e.g. molecular methods, for the detection of viable protozoa, such as *Cryptosporidium* and *Cyclospora,* in food is urgently needed.

5. SRSVs—in many cases of suspected viral gastroenteritis no pathogen is identified in the stool specimens. However, when molecular techniques become routinely available it is likely that a greater role will be recognised for viruses in foodborne outbreaks.

- Methods for the isolation and detection of viruses, particularly SRSVs, in shellfish require further development.
- Alternative viral indicators of shellfish pollution with respect to their practical application to the classification of harvesting areas, depuration, and end-product assessment require further development.

4.9 Survival of Bacterial Enteric Pathogens

1. The effect of different conditions, for example temperature and pH, on the survival of these organisms at all stages along the food chain requires further investigation.

4.10 Other Issues

1. The level of investigation of outbreaks of foodborne infection is uneven and depends on a variety of local factors.

2. The level of reporting of foodborne disease is also uneven partly because the notification system is voluntary.

3. It is the opinion of the PHLS that infection with VTEC should be a notifiable disease.

4. The burden on the UK of foodborne disease requires assessment and qualification.

5. Social changes—an increasing proportion of the population is resident in or attends nurseries or day care centres. The proportion of foodborne outbreaks of infection effecting people in these environments is rising. Current resources are insufficient to allow these outbreaks to be investigated with the result that they are often difficult to control and do not provide lessons to assist in the prevention of future outbreaks.

6. Guidance and education—the mechanisms by which the food industry including caterers and the general public are advised on food issues are inadequate as judged, for example by the widespread failure of all concerned to follow the advice of the CMO with regard to soft cooked and raw eggs.

7. Outbreaks of foodborne infection—despite the best endeavours of the PHLS there is currently no coherent or consistent approach to the investigation of outbreaks of infection and even less attention to sporadic cases of infection. Activity is dependent on local resources, and the interest in the subject of the health care professionals concerned.

8. Following implementation of the EC Directive relating to travel the PHLS has been gathering information since 1st August 1997. In the period 1st August to 10th October 1997 55 outbreaks of infection have been reported among UK travellers returning from abroad.

9. Criteria for evaluating the efficacy of new intervention techniques require development.

Note: This submission has not addressed the possibility that animal prions might be transferred to man in food. The PHLS would be willing to address this issue should the Committee wish.

31 October 1997

Examination of Witnesses

PROFESSOR BRIAN DUERDEN, Deputy Director, DR BERNARD ROWE, Director, Laboratory Enteric Pathogens, Colindale, PROFESSOR TOM HUMPHREY, Head, Food Research Laboratory, Exeter, and DR JOHN DE LOUVOIS, Head, Environmental Surveillance Unit, Colindale, Public Health Laboratory Service, examined.

Chairman

120. Gentlemen, good morning. Thank you very much indeed for coming. Can I begin by expressing our very real gratitude for the extraordinary amount of work you have put into the written evidence which I think we have all read—not necessarily understood, but read—but we are genuinely grateful to you for such informative evidence. Can I invite you perhaps just to begin by introducing your team and, perhaps for the record, saying something about the work of the PHLS in food safety and the other bodies it relates to.

(*Professor Duerden*) Thank you very much and thank you for asking us to give evidence to your Committee. The team we have here this morning: I am Brian Duerden. I am deputy director of the Public Health Laboratory Service. On my right is Dr John de Louvois, head of the Environmental Surveillance Unit which is part of the Communicable Disease Surveillance Centre and Central Public Health Laboratory at Colindale. On my far left is Professor Tom Humphrey, who is head of our Food Microbiology Research Unit based at the Exeter Public Health Laboratory. On my immediate left is Dr Bernard Rowe, who is the director of the Laboratory for Enteric Pathogens at the Central Public Health Laboratory, Colindale. The Public Health Laboratory Service is a national organisation serving England and Wales, concerned with the whole range of communicable diseases. We have our central headquarters at Colindale in north London, where we have the Central Public Health Laboratory providing central reference laboratory services for the whole range of communicable diseases, together with the Communicable Disease Surveillance Centre, which is responsible for surveillance and for gathering the data about communicable diseases across the country. As well as that central organisation, we have 49 laboratories around England and Wales, covering the whole country, providing local services to the hospitals in which they are based and to the Environmental Health Departments and the Consultants for Communicable Disease Control in those areas. We do in effect through those cover the whole of the country in a network organisation. From the food safety point of view, there are really two aspects of this. We are concerned initially with public health, with human disease, and for that obviously we start off with sick patients, so we are concerned primarily, in this case, with people with gastroenteritis. It is sometimes difficult for us to identify precisely work that is absolutely food related and nothing else, because we start with sick patients and only further on in the investigation of those patients do we find out that perhaps it is food related, because other aspects of gastroenteritis involve person to person spread. We organise ourselves from the systems point of view of the intestinal infection rather than saying food borne or non-food borne. That will obviously influence some of the answers that we give later this morning. We also do a considerable amount of direct food related work in that we provide services locally to the Environmental Health Departments and in the investigation of foodstuffs, both in routine surveillance, which can be either in coordinated national or European surveys, or local ones arranged through local food groups involving Environmental Health Departments and ourselves. We are involved of course in the examination of foodstuffs in outbreak situations. I think it is one of the great benefits that we have in the service, in that we do both the human disease work and the food and environmental work in the same laboratories, with coordinated staff, under the same direction and we can bring the two together. That gives perhaps a thumbnail sketch. One thing I would like to say about our activities, because some of the questions you have indicated to us in advance relate to research and development, is to ask the Committee to note that we are not a research institute. Our primary role is not research. It is one aspect and it is a very important aspect of PHLS work because it underpins all our other work, but a large part of our activity of course is service. Even what some people might regard as research, which is the specialised services that we provide in the reference laboratories, does not come under the R&D heading but it is part of the special reference facilities and I will try and draw that out in answer to some of your questions throughout the morning.

121. But you are clearly in a good position to identify research that is necessary?

(*Professor Duerden*) Yes.

122. Could you tell us how much you spend in total and what proportion of that would be on food related work? Can you tell us what the total budget for the PHLS is and how much of that will be related to food?

[**Chairman** *Cont*]

(*Professor Duerden*) The total budget of the PHLS is £115 million, of which approximately half or a little under half—about £54 million—comes from the Department of Health and the Welsh Office in direct funding. The remainder comes, the bulk of it, from the National Health Service for providing services to hospitals, general practitioners and so on and a small amount of other income. I cannot say of that directly how much is food related because most of our work is categorised as gastrointestinal rather than directly food related. I can say from the research and development point of view specifically that this year we are spending £1.5 million on research and development in gastrointestinal areas. Of that £1.5 million, £0.5 million is from the PHLS central funding, which we receive direct from the Department of Health, and £1 million is grant income that we have won mostly in external competitive grant applications. Much of it has been from the Department of Health and from MAFF. That £1.5 million represents 20 per cent of PHLS research and development expenditure. Our total research and development expenditure is £7.8 million. The centrally funded component of that £7.8 million is £4.5 million and that represents around nine per cent of our central funding devoted to R&D. Of our total R&D, 20 per cent is gastrointestinal.

123. Are you attaching increasing importance to that aspect of your work at present, because food poisoning is increasing very sharply? Are more of your resources going in this direction? Is there a trend you can identify?

(*Professor Duerden*) Over the last three years, we have invested £0.5 million pounds recurrently in gastrointestinal work and that is new money created by internal savings, recycled money from within the PHLS budget but new investment on a recurrent basis. That has been to establish the Campylobacter Reference Laboratory and to do further work on *E.coli* O157 with enhanced surveillance and enhanced diagnostic methods. We have made that investment over the last three years and that is recurrent money that stays in the system. We have reallocated resources into these high profile, important areas.

124. How much independence do your 49 local laboratories actually enjoy in determining their own priorities, particularly in the gastrointestinal work?

(*Professor Duerden*) They have some independence. They need to respond to local needs and there is some aspect of their work that is determined by the local food groups. Of course, a large part of their work is in response to what is happening in the population. Their investigation of disease depends upon what disease is happening. They respond to the outbreaks that are occurring in their areas. That is of course driven by what is happening in infection in the population. The research and development aspects of this and the surveillance aspects do come under more direct central guidance. In terms of surveillance, there are three levels of this. We are involved in the EC directed surveillance. That is Europe wide surveillance activities and of course that comes down to us and is conducted in the laboratories. There is also a national programme of surveillance coordinated through LACOTS and PHLS centrally and that again goes out to the various laboratories and is done there. The third level is what is determined locally by the local food groups and there they do have local independence, though we gather the data nationally to coordinate it. They can follow local interest there. As far as research and development activity is concerned, we have a system of setting priorities in the PHLS called the Overview of Communicable Diseases which is an exercise conducted every two years. That sets the priorities. Food poisoning and food related infections are high in the priorities. Research and development within the service has to reflect these priorities. We have a system of monitoring all our research, both in the reference laboratories and in the peripheral network, through Scientific Project Advisory Groups who are drawn in from external people, external to the PHLS, to provide a peer review of our research. They peer review for both quality and for its alignment with PHLS priorities. Also, those laboratories that wish to seek funds from the central research budgets of the PHLS have to bid to headquarters for those funds. We would review applications on the basis of priorities.

125. Thank you. That is a helpful, factual statement which makes your situation clear. Can I make our situation clear? You say that three issues which you have raised very helpfully in your written evidence do not seem to be within our terms of reference. I can assure you they are. We are intending to be all embracing. Certainly imported foods, sewage, sludge and animal feedstuffs are regarded as very important issues in our inquiry. Thank you for the evidence you have submitted on them. They are not intentionally excluded in any way. Getting on perhaps now to the meat of your evidence in relation to food poisoning, you say that there is likely to be a substantial increase in human isolates such as *Salmonella*, *Campylobacter* and *E.coli* in 1997 compared with last year. Why, given the huge amount of work that you and all the other organisations in the field are doing, does this remorseless increase in cases continue?

(*Dr Rowe*) I am not sure that "remorseless" is quite the right word. Perhaps I could explain what I mean by that. Surveillance of food borne illness is based on two sorts of data which we have shown in our submission. There is the statutory notifications which are essentially clinical diagnoses usually by general practitioners but sometimes by hospital doctors and others, unsupported by laboratory identifications. Then there is the PHLS data which is totally laboratory related and you have to have isolated an organism before you become a statistic. If we look at the statutory notifications, there has indeed been a remorseless increase from 24,000 in 1986 up to 83,000 in 1996, but I would draw the Committee's attention to the fact that in the years 1994, 1995 and 1996 the increase has dropped off substantially and is only 1,000 year on year; whereas prior to that it was quite enormous. There is a slowing down and I think that is not generally appreciated. If you look at the laboratory confirmed cases with which our data are concerned, the two major ones are *Campylobacter* and *Salmonella*, and indeed in the years 1994, 1995 and 1996 the totals for those two organisms have remained reasonably

[**Chairman** *Cont*]

steady. For *Campylobacter,* it is round about 43,000 and, for *Salmonella,* round about 30,000. The increase in *Campylobacter,* from 1977, when it was first discovered, is explainable quite easily in the main because of the fact that this was a new organism; new methods had to be devised, laboratories had to take the problem on board. I think that accounts greatly for the rise up to 1993 or thereabouts. Now we have this relatively stable period. Salmonellas, as everybody knows, went up tremendously between 1987 and 1993 and this was clearly related to the egg and poultry associated *S.enteritidis* PT4. Again, that has remained reasonably steady over the years 1994, 1995 and 1996. The enormous rise has in fact halted and has levelled out at 1996. If I could address 1997, which is a unique year in many ways. Firstly, I am told it is the warmest year since records have been kept. We all know that food poisoning is much more prevalent during the warmer summers than in the cooler summers. It is perfectly true that, in 1997, the food poisoning notifications to date are up 12 per cent or thereabouts above the same period of last year. It is equally true that *Salmonella* is up ten per cent. It is also true that *Campylobacter* is up 12 per cent. So this year, 1997, certainly looks as though it is going to be a very special year. Most worrying of all—and I do not think one can explain this in relation to the weather—is the fact that VTEC *E.coli* O157, which is a very nasty organism, is up 60 per cent. The total for last year was 660 for the whole of the year. We have already exceeded 1,000 this year. Part of that may be explainable by increased interest and activity following the unfortunate outbreak in central Scotland last year, but I do emphasise this is a very worrying situation with a 60 per cent increase this year of a very nasty organism.

Mr Mitchell

126. I am not sure what you are saying there. You are clearly saying that if global warming goes on it is going to get worse but what are you saying about the past? That there is more awareness and you are more sensitised to discovery, more able to discover, and that is the reason for the increase, or Mrs Curry or whatever, or that the incidence of these things is actually increasing?

(*Dr Rowe*) I think there is no simple explanation. I have merely stated the facts: that the increase has levelled off—and there is no doubt about the figures there—with the exception of 1997. The figures are available and are in the submission, 1994, 1995 and 1996, for the total notifications for salmonellas and for campylobacters. They were reasonably stable during those three years. This year is exceptional and I do not think you will find one single, simple explanation for it. I have tried to take you back over the past to explain what I think is the major factor in the rise of *Campylobacter*, which was a new organism. I have no doubt that the rise in salmonellosis between 1987 and 1993 was predominantly associated with one type in poultry and eggs.

127. Or the panic about that?

(*Dr Rowe*) There was no panic. It was quite clearly due to that organism.

128. You could have fooled me!

(*Dr Rowe*) There was no panic on our part!

(*Professor Duerden*) There really were many cases that were genuine.

Chairman

129. It does quite concern me. We are still operating quite a lot, are we not, on guesswork in looking at the causes of food poisoning, slightly contrary to what you say? For example, we do not know why Northern Ireland enjoys so much lower a level of food poisoning and that seems to me to be significant.

(*Dr Rowe*) Yes. I think that is absolutely true. We equally do not know why VTEC infections are three, four or more times as common in Scotland. I think this underlies the need for continuing investigation and research.

130. We have had evidence that it is very difficult to concoct a research project which would pinpoint the reasons for higher incidence of food poisoning in England and Wales compared with Northern Ireland. I find that difficult to believe. Surely it should be an attractive subject for a PhD student, should it not?

(*Dr Rowe*) I think probably the best thing is not to use the words "food poisoning", but to try to focus down on to the individual organisms because that reflects the intensity of the laboratory investigations in relation to the organisms.

131. Before I pass on to Sally Keeble, can I ask you one technical question about your evidence? I found your summary of recommendations in the early part of your document, in the Roman numeral section, very helpful indeed. One number is repeated. Number six gets two mentions. Is there one missing that should have been a number seven or are there actually 11 recommendations?

(*Professor Duerden*) We do apologise. It was 11 recommendations and in the final editing it was not removed as it should have been.

Ms Keeble

132. On page three of your introductory section, you say that there will be problems at all stages of the food chain and no real progress without a coordinated approach etc. By inference, you imply that, up to now, there has been little significant progress and the statistics might support that view. What measures would you propose that are radically different to current approaches and that the proposed Food Standards Agency could adopt to ensure that we make an impact on the problems?

(*Professor Duerden*) The reason we put this in is that we feel there are various agencies involved in the investigation of food borne infections that tend to work independently and individually, perhaps in a less coordinated way and perhaps a less collaborative way in the past than would be the most beneficial, because this is something that crosses environmental health, public health, veterinary medicine and the farming industry. All these are brought together. Really, the problem has to be addressed by all four together. We feel there is a need for better integration

[**Ms Keeble** *Cont*]

of these activities. From our concern, particularly nationally, we need to have better collaboration between ourselves, from the Central Public Health Laboratory and colleagues in the Veterinary Investigation Service, particularly at the Central Veterinary Laboratory, perhaps with a coordinated, agreed programme of activity. Again locally, there needs to be perhaps more coordinated activity between the Public Health Laboratory Service, the Veterinary Investigation Services around the country and the Local Authorities who are responsible for the statutory activities in relation to food monitoring and investigation. If we could have enhanced and timely collaboration between these, we could perhaps have better, more effective intervention and we could look towards a joint programme of activity for surveillance and for outbreak investigation. It is not to say that there is not cooperation; there is, but it varies across the country and depends upon local circumstances. Perhaps it needs to be more formalised, in our view, perhaps through the coordinating role of the proposed Food Standards Agency. It would perhaps provide a vehicle for bringing these activities together and a focus for that collaboration.

133. Would you say that your section four perhaps provides a preliminary work programme for the Food Standards Agency, where you have put the areas of significant gaps in current scientific understanding? Are those things that you think properly the Food Standards Agency should be looking at, to make sure that we have all that information?

(*Professor Duerden*) I think, from the discussions that there have been on the Food Standards Agency, certainly one would look to it to be helping plug the gaps that have been identified in our knowledge and our activities, as part of its activities.

134. You are obviously particularly concerned with microbiological aspects of food safety and that is clearly under the Food Standards Agency. Do you think that the Food Standards Agency should then look at some of the other factors involved in food safety which are implicit in your section four, because it does cover the wider areas? You have quite a lot in there about food labelling and such like, have you not? Do you think that that should properly be in the remit of the Food Standards Agency as well?

(*Professor Duerden*) Our concern is specifically with infection related to food. It would be inappropriate for us to comment on other aspects of food safety.

135. You obviously have very strong views on this because you get the end results of the failures right along the system, do you not? You have got very forceful advice in your evidence.

(*Professor Duerden*) Our comments about labelling relate particularly to labelling in relation to pasteurisation of products, which is a bacteriological safety measure to prevent infection.

136. But you also have very pertinent remarks about, for example, the advice given by the Chief Medical Officer and why it is not taken. You do go far beyond what has been discussed as being a very narrow remit for the Food Standards Agency.

(*Professor Duerden*) All the areas that we have highlighted there, that we see from an infection point of view, do have knock-on effects because there are parallels to be drawn with other forms of food contamination, one might say, on the aspects that relate to safety. We address them specifically from the infection point of view and feel that the Food Standards Agency should have a particular concern here. All these suggestions that we are making do relate to improving the microbiological quality of food and the microbiological safety of food.

137. Does that mean you do not think it should look wider or you do not want to say?

(*Professor Duerden*) I think it should look wider but it would not be appropriate for a body concerned with infection to comment on toxic chemicals and so on. It is not within our sphere of knowledge and expertise.

138. Whose sphere is it then, just so that we can make sure that they get asked?

(*Dr de Louvois*) Ultimately, it is the responsibility of MAFF.

139. How much of the recommendations that you make can we do independently of what is in European legislation?

(*Professor Duerden*) We have to comply with European legislation obviously and the current UK legislation now is derived from the European. I do not think we have put in anything that would be contradicted by European legislation.

(*Dr de Louvois*) The effects of the European legislation impinge ever more and, as an example, we understand that any UK legislation with regard to the banning of unpasteurised milk at retail will require European approval. This, it is suggested, would delay the UK legislation by a year or more.

Chairman

140. This is an issue which you would attach particular importance to, is it not?

(*Dr de Louvois*) Yes.

Ms Keeble

141. All the other factors that you have in your section four and all the other measures that you propose are quite okay in terms of European legislation apart from the unpasteurised milk stuff? Is that right?

(*Dr de Louvois*) To an extent. It would be unwise to say that the full extent of any one of the issues we have raised could be implemented in the UK without any interference. That would be much too strong a thing to say. There are certainly steps, we believe, that could be taken in this country which would not interfere or be affected by European legislation at this time, but of course things are changing all the time.

(*Professor Duerden*) Of course, we have addressed it from the microbiological and professional points of view. We are not lawyers.

142. I understand. It is just that we are going there tomorrow and it might be quite helpful. You did make some remarks about cooperation between

[**Ms Keeble** *Cont*]

different organisations and you implied that the Food Standards Agency should be responsible for that. Can you give any more detail as to how that would actually work and can you also say if there are particular problems arising because there are gaps in the cooperation at present?

(*Professor Duerden*) From the Food Standards Agency point of view, I think that will provide the formal mechanism to draw the bodies together and create a framework within which the collaboration would be forced to occur.

143. How do you think that collaboration should work? We talk quite a lot about partnerships and, unless they are structured, they do not actually deliver anything.

(*Professor Duerden*) We believe that the Food Standards Agency should set the standards and set the protocols for the investigation of food related infection and for monitoring, from our point of view, the microbiological standards of food. We would see them requiring local teams that would involve the Environmental Health Department, the local veterinary services, ourselves (the PHLS) to provide a single approach and a team approach to the investigation of the food problems and the surveillance activities in their areas, being required to report on an annual basis that these were the activities they were doing. It would provide a framework within which to operate and a set of standards to operate to that would necessitate the collaboration of these bodies.

144. What are the gaps that there are presently which mean that it is not working? Specifically, what are the gaps in research and surveillance?

(*Dr de Louvois*) One of the gaps which is of concern to us, since we identify the problem at the end of the chain, that is when somebody has become ill, relates to the organisms that emanate from animals. Those that are responsible for disease in animals have been in the past perceived as of greater interest to the agricultural industry than those organisms that are in animals but do not cause infection in animals but are zoonotic — that is, they cause infections in man. One of the major collaborations, we feel, which would be useful would be the mutual addressing of the question of micro-organisms that can move progressively down the food chain. We talk about animals but of course this is also important with regard to vegetables and fruit as well, as we have seen in certain recent outbreaks. It is the need for greater awareness at the agricultural end of things that there are problems which may not impinge on them but which do have a significant public health potential.

145. And the surveillance side?

(*Dr de Louvois*) Within this would come a level of surveillance. To have more accurate information, for example, on the extent of *E.coli* O157 carriage in animals would significantly improve our understanding of the organism, bearing in mind, as Dr Rowe said earlier about *Campylobacter*, that *E.coli* O157 is a new micro-organism and we really know very little about it.

146. From your evidence, you imply that there are some genetic changes to the bugs and that there are new bugs which come into play, as you have just said, with *E.coli*. Does the introduction of genetically modified organisms into the food chain have any relation to that, or could it, or is the whole concern about genetically modified organisms not really relevant to this aspect of food safety?

(*Professor Duerden*) It is not really relevant to our concern with food borne disease. We are concerned about the natural changes that occur in micro-organisms in the environment. They multiply rapidly; they change rapidly.

(*Professor Humphrey*) They do evolve remarkably quickly. They have a lifecycle of 20 minutes and any change in any practice will ultimately result in a change in the bacteria associated with that practice.

147. You do not believe that the GMOs can play any part in that?

(*Professor Humphrey*) We do not believe so.

Mr Mitchell

148. Your second recommendation calls for improvement in the inspection system for examining food producers and wholesalers to recognise significant food safety risks. You do not include manufacturers there. Are they not one of the suspects?

(*Professor Duerden*) I think we should have included manufacturers. It is the whole food chain that is relevant to the need for improved inspection, in our view.

149. Are you pointing the finger at any particular group? The producers? The manufacturers? The distributors?

(*Professor Duerden*) No, because it is all along the line of food production and preparation and presentation. There need to be controls and safety measures in place.

150. I would have thought that manufacturers, for instance, have a sufficient vested interest in not poisoning people that they are going to be concerned for the highest possible standards.

(*Professor Duerden*) That is true. They are concerned to have the highest standards but things still go wrong. They need help through the inspections to get advice on production.

151. What do you want to do? What form are these improvements going to take?

(*Professor Duerden*) In using the word "system", we are really referring to standardised protocols and procedures for inspection and for reporting the results of those inspections; increased specialist training for inspectors to work to such standard protocols. In particular, it comes back to the collaboration aspect. At the moment, the inspection side is the responsibility of Environmental Health Departments and Environmental Health Officers. It varies as to how much they involve the other professional groups with inspections and with assessing what are the vital aspects of it. We would see the increased collaboration between Environmental Health Officers, ourselves and our veterinary colleagues providing a team approach to this and perhaps also the members of those teams equally having the right of access to inspect and to sample, rather than the separation of those responsibilities that there is at the moment.

[**Mr Mitchell** *Cont*]

152. Why does the performance of the local people vary? Are you saying that there is some form of collusion with producers or with the industry?

(*Professor Duerden*) No, I was not suggesting collusion with producers, just that there is not a formalised organisational approach to this.

153. Can we move on to imports which we are dealing with, although the assumption in your paper seems to be that we are not? First of all, what about imports from the EEC? There is a lot of song and dance here about non-EEC imports but nothing is said at all about imports from the EEC; yet I see some outbreaks of food borne disease associated with food in international trade. That is 1.5, table three. Of the 17 outbreaks, seven concern food from the EEC.

(*Dr de Louvois*) You are quite right. The difficulty that we now have under the single market is that we are not permitted to selectively survey food that comes to us from the European Member States.

154. Why?

(*Dr de Louvois*) This changed in 1995 under the single market, so the facility for us to look at cheese or poultry from another Member State does not exist, unless there is an identifiable problem.

155. You mean when French cheese starts poisoning people you can look at it?

(*Dr de Louvois*) That is right, yes.

156. I am sure that is very comforting for the consumer.

(*Dr de Louvois*) We can look at all cheeses but we are not allowed to look selectively at cheese from a particular Member State. The other major component which is of concern to us is that, under the EU legislation, if food from a third country enters through any port within Europe, it then has free access across the whole of the European Community. While food may have been traced back to a European Member State, it could have originated from a third country. One of the points that we made with regard to the labelling and manifest details about foods was that they should be far more traceable than is currently the case. In a number of outbreak investigations we cannot trace back the food to its manufacturing source.

157. Are you happy that the inspection procedure, both in terms of domestic production and imports, has the same high standards in, say, Greece and Italy that it has here?

(*Dr de Louvois*) The PHLS could not comment on that. One of the points which we have constantly to make to people is that the PHLS has no enforcement powers at all. We pick up the problems at the end of the chain, which is why we make emphasis in section four to areas, right back to farm manufacture, that need to be addressed. We pick up the end result and we do not have enforcement powers, or indeed even entry powers into manufacturing plants. If you were to ask us off the record, we would say that we are concerned that there may not be uniformity for economic as well as other reasons. If 75,000 tonnes of a high risk food comes into a port, it creates a major potential problem. As in this country also, there has to be selective sampling because the resources are very limited. It tends to be that imported foods are focused on. If we identify a problem, for example, there has been perceived to be a problem with spices, which is a relatively trivial example, the four major importing ports of the UK cooperated together and did an extensive study on the level of contamination from spices. There have been similar concerns about imported fish and again there have been concerted efforts, but that simply means that the balance has to shift from one area of activity to another.

158. I was going to mention imported fish. You have inspections at EC approved border inspection posts at Hull, Immingham, and Grimsby. Does that mean that fish coming in at any of those ports is inspected or is it just that cases are referred to you when problems are found?

(*Dr de Louvois*) No. Fish can only come into the UK from third countries direct through approved ports. These designated ports are approved to accept various food products, so Grimsby can accept fish. It is then down to the port health authorities to determine what level of scrutiny they will apply to the products that come in. For example, products that come in from America, by and large, have a far lower level of scrutiny than products that come in from the Indian Basin. You will be aware I am sure that there have recently been a number of EC decisions banning the importation into Europe of fish from India, Madagascar and so forth.

159. Yes, so it comes in via Singapore instead.

(*Dr de Louvois*) We do not have any evidence of that.

160. But I do! Let me stay with fish for a moment, because we have just had a quite exciting problem caused by the EU decision that fish from Russia can only come from registered trawlers, registered freezers. The Russians appear reluctant to register their freezers. The result is, a couple of weeks back, we had a cargo of fish which arrived in Hull which was turned away by the port authorities, not because of the quality; it was not on the list. They intimated it might be landed at Aberdeen. It went to Aberdeen and Aberdeen said it might be landed in Stranraer. It went to Stranraer and eventually went back to Riga. This is bureaucratic failure, is it, on the part of the port health authorities rather than an inspection failure? The quality is not actually assessed; it is just staying within the rules.

(*Dr de Louvois*) It is outside our remit.

161. I know that.

(*Dr de Louvois*) But I would say that, certainly for the foods that we are concerned with, there is close collaboration between the ports. We are told that they have tightened up their procedures to prevent this hawking around of products. There is concern that ports outside of the UK may be visited once batches have been turned away from the UK but within the UK we are assured by the Association of Port Health Authorities that they have tightened up their paperwork, in effect, to ensure that a consignment that is rejected under EC legislation from one port cannot then be hawked around to another.

Mr Mitchell: But fish is now coming in via Amsterdam. I will not ask any more.

Chairman

162. I was concerned by one comment in your evidence in Section 3.1.1: "... laboratories in different regions vary greatly in their reporting efficiency with a concentration of poorly reporting laboratories in certain regions." That does seem to be quite a problem for you in doing your job. Is it?

(*Professor Duerden*) The point here is that notification of communicable disease of all sorts, including food borne disease, under present legislation, is voluntary, as far as the laboratories are concerned. The only statutory notification is from medical practitioners—GPs and hospital doctors—when they detect certain diseases. With our Public Health Laboratories, we can do our best to ensure that they report because they are part of our own organisation. Even that is not always the easiest thing, running a network of 49 and getting them all to do everything absolutely to the same degree, but outside of that we cannot control. We depend upon purely voluntary reporting from other non-PHLS laboratories.

163. Surely, if we are to achieve an accurate picture of the incidence of microbiological poisoning in individuals, this must be changed?

(*Professor Duerden*) We believe very strongly—and we have given evidence in relation to the changes in the law on public health—that laboratory notifications should become a statutory responsibility and that certain organisms should be added to the list, such as *E.coli* 0157, which is not notifiable at the moment. We believe that all laboratories should have to report all their isolates in the specified categories to the Communicable Disease Surveillance Centre.

164. Is this a resource issue? Is it that they cannot afford it? They have too many competing pressures, serving the National Health Service generally?

(*Professor Duerden*) I am sure that that will be a comment if and when such legislation comes in, if it does come in that it is obligatory. There will be claims that there are resource implications, because obviously there are. It takes both materials in terms of the computer systems to do it and man hours for the work to do the notifications.

165. As scientists, you would say the Food Standards Agency can only do its job properly if it has good quality information to work from?

(*Professor Duerden*) Absolutely, yes. That is an easy answer!

Ms Keeble

166. I just wanted to ask a question on the inspections. In Section 4.10, para 5, you say that there is an increasing proportion of foodborne outbreaks and infections amongst people at nurseries or day care centres. That presumably you have based on the samples that you have and the work that you have done?

(*Professor Duerden*) Yes, this is based upon our information of the outbreaks that have been investigated around the country, where we have firm evidence and we have done the laboratory work. The outbreaks have been investigated in conjunction with Consultants for Communicable Disease Control and EHOs.

167. You then say: "Current resources are insufficient to allow these outbreaks to be investigated ..." and controlled, but that should be easy because they are either run by or inspected by the local authority and that should be a fairly automatic procedure, should it not? If it is not, then there must be a problem with the local authorities, must there not?

(*Professor Duerden*) I think it is resources across the board, particularly the inspectors. The pressure is on the Environmental Health Departments of the Local Authorities. There is pressure on the one Consultant for Communicable Disease Control in any one Health Authority area. The laboratory can only work with the material that is sent in by the colleagues who are doing the investigation on the ground. We are not responsible for going into the nurseries and getting the specimens ourselves.

168. I wanted to ask you about your recommendations on food hygiene education. You say that the educational programmes should be provided for the public, for school pupils and for food handlers. How do you make sure that it is successful?

(*Professor Duerden*) I think we would need to look to organisations such as the Health Education Authority to help with that. As an organisation, the PHLS is not an educational organisation, even though we have two professors sitting here. We can provide the evidence, the help and the support for professionals in communication and education to get the message across clearly, with the amount of disease and infection there is, and the repeated ways in which we find the same errors occurring that lead to outbreaks. Education is needed.

169. You also said that you think the Chief Medical Officer's advice on the consumption of raw and lightly cooked eggs and egg dishes should be reissued but you also talk, in Section 4.10, para 6, about the mechanisms by which people are advised on food issues being inadequate as judged by the failure of all concerned to follow the advice about soft cooked and raw eggs. There is a clear contradiction between those two. How do you actually get the message over? Do you actually think that education is more important than, for example, some of the other, more structured recommendations you have like there should be thermometers in all fridges and stuff like that?

(*Professor Duerden*) I think there is equal weight to be given to these. We did not intend there to be a contradiction in what we were saying. The CMO's recommendations are appropriate recommendations, which is why we believe they should be reissued and re-emphasised. We are concerned on page 100 that the way in which the message has been put over does not seem to have had the desired effect of widespread public education. We would suggest it is a case of reissuing the message, perhaps with more educationalist help or communications help to get the best takeup of that message. There are experts in that field who could perhaps provide the necessary input.

Mr Hurst

170. We have had, I suppose, fairly encouraging statistics presented to us from government sources showing that there has been a decline in recent years in the incidence of *Salmonella* in broiler breeding flocks and also a limited decline I think in retail chicken, but I think your concluding statement is that the situation has improved since 1993. You are being much more cautious perhaps than the government sources are.

(*Professor Duerden*) Ours are based on cases of human infection.

(*Professor Humphrey*) We recognise that there are clearly many causes of salmonella infection. Poultry meat is but one. The industry and MAFF are to be congratulated on their comparative success with broiler breeder flocks, but it takes a while for that improvement to filter down to the commercial level. Eggs, desserts, a whole range of foods are still causing outbreaks, and I think we need to make sure that the control is applied not only to poultry meat but to all other foods as well.

171. When our Chairman was asking you questions earlier on, there was the question of to what extent is it within your knowledge that the statistics are affected by the reporting incidence which must be greater as the years go by.

(*Professor Humphrey*) I do not know.

(*Dr Rowe*) The organism which is predominantly associated with eggs and poultry is *Salmonella enteritidis* PT4. If an infection occurs and a laboratory has isolated an organism, in order to follow the epidemiology, it has to send that organism to a specialised laboratory, and there is only one in this country, in England and Wales, and that is mine. When you have such an organism as that, you are more likely, in my opinion, to have that organism actually sent for identification and for it then to become a real statistic. The point I am making is that I think, as far as the *S.enteritidis* PT4—eggs and poultry—problem is concerned, the statistics that we are presenting are realistic.

172. The point I am concerned about is, as you become more efficient in the gathering of statistics, does that in fact give the impression, perhaps wrongly or perhaps rightly, that the situation is worsening?

(*Professor Duerden*) In many communicable diseases, you do have an effect of interest in the disease that can influence the degree of investigation by doctors and the degree of reporting. That applies particularly to clinical reporting and perhaps to the frequency with which some doctors will send specimens to the laboratory. Once we have material in the laboratory, as Dr Rowe said, the organisms that are isolated are sent on to us and that is much more definitive data. In the case of the salmonellas, I do not think the increases that were described were in any way spurious just because people were more interested. They genuinely were occurring.

173. I am not saying they are spurious; I am just saying that perhaps previously there was not such a ready collection of that data as there is now.

(*Dr Rowe*) I do not think in principle, that the way the Public Health Laboratory Service has functioned in general terms, and how it has offered its identification services to other laboratories, has changed greatly in the last 20 years, as far as *Salmonella* is concerned. As far as *Campylobacter* is concerned, you may wish to come to that again later, but it is a different matter. As far as *Salmonella* is concerned, I can certainly speak for the past 20 years and I can tell you that there has been really no great change in our activity. Anything that has been recorded is real.

174. Following on a question that Mr Mitchell put, which I think links in with this, it is about foodstuffs from abroad, be it the European Union or indeed outside the European Union. The suggestion was you have no enforcement powers, which I think must be right. Would I also be right in saying that you would report matters of concern to the appropriate enforcement bodies?

(*Professor Duerden*) Yes, anything that we isolate. Of course, the samples have usually been sent to us by people who have some degree of enforcement authority and we return the reports to them for action, usually action taken in consultation and after discussion, when we are advising on this. You are quite right: we do not have the enforcement responsibilities and should not have them.

175. Would I be right in saying that there are similar bodies to your own in other countries, certainly within the European Union, if not elsewhere?

(*Professor Duerden*) Only in some countries and very few developed to the same extent as the national network that we have. That is part of the reason why, for some infections, sometimes we seem to have a worse record than others because we actually do the work and know what is happening in the UK; whereas many countries do not have as well developed surveillance systems and therefore may appear to have a better record because they do not know what is going on in those countries.

176. Are you in a position of mutual exchange of information with those other countries?

(*Professor Duerden*) We are.

(*Dr Rowe*) I perhaps could give you the example which is in Table 3, section 1.5, of the imported problems. It does not actually come out but if you look you will see that we had an outbreak associated with a flavoured savoury snack with a salmonella in it. That snack was actually manufactured in Israel and the Israelis had already had an outbreak of over 2,000 cases of which they were not aware until we pointed it out to them. We were then sufficiently alert to point it out to the United States of America and Canada. So I think that is a good practical example of where surveillance in this country picked up an imported infected material that had been produced somewhere else and then warned other countries.

(*Professor Duerden*) That is through a system that has been established internationally which up until this year was called SALMNET and has now been extended to be called ENTERNET. This links in other bodies in the other countries where there are specialist centres responsible for salmonellas and for *E.coli* and so on. That network exchanges data in this way and it was through that network that we were able to alert other countries.

[**Mr Hurst** *Cont*]

177. So whilst you may not have power outside this jurisdiction, you certainly have influence to bear outside and that may result in further investigations and enforcement in those countries of origin, is that right?

(*Professor Duerden*) Yes.

Mr Mitchell

178. Do you publish a league table of complaints such as France: nil points? Is there a scale of countries which you get more complaints about?

(*Professor Duerden*) It is not so much complaints. We do not publish a scale. We publish the evidence of the various outbreaks one by one, of which the savoury snack from Israel was one and the dried milk baby feed last year received publicity and that was a *Salmonella*. There are also travel associated infections. We do not actually have league tables of countries.

Mr Hurst

179. Perhaps I may move the questioning on to sausages. One was horrified by the fact that the figure bandied about was one in six. I was even more devastated to read that it was 17 per cent of sausages that were analysed in one survey as being contaminated with *Salmonella*. That strikes me as an amazingly high figure. Was that just a random survey or is there much broader information and evidence beyond that?

(*Dr de Louvois*) This was one of the PHLS initiated surveys because of concern about compound meat products, sausages and burgers being the most popular examples. It was not a statistically structured survey to ensure that we had absolutely right the proportions of each sausage type but a random survey by Environmental Health Officers and PHLS staff buying sausages as though they were members of the public. The finding from this study which concerned us most in both products was that the economy end of the market was dramatically worse than the high quality end and information that we have had since has reinforced this. People are buying very low priced sausages where the amount of red meat would seem to be dramatically lower than in best beef sausages and in these the contamination level with *Salmonella* in general and *Salmonella enteritidis* PT4 in particular is significantly higher. This may also be reflected in the risk of illness because at the lower end of the market there may well be people who do not have appropriate refrigeration, do not understand refrigeration, are not so susceptible to educational warnings on the handling of food and so forth.

180. Is this an isolated survey or is there wider evidence on sausages and hamburgers beyond that?

(*Dr de Louvois*) We focus on what we perceive to be a public health problem area and then as time and resource permits expand on it to determine the extent of the problem. At this stage we can say that the original survey—and results since then have reinforced the results of the original survey—results show that the cheap products are those that pose the greatest risk. Some work which Professor Humphrey has done has shown that salmonellas in frozen sausages that are cooked according to the manufacturer's instructions may still be present in the cooked product.

181. I am surprised that there has not been more public illumination on the matter. It is one in six on sausages as opposed to one in 600 on eggs. Why is it that sausages are not so highlighted?

(*Dr de Louvois*) You realise we are looking at raw sausages?

182. I appreciate that.

(*Dr de Louvois*) No, I cannot answer that.

Mr Mitchell

183. Would it not be useful for public education purposes if you published a league table saying that sausages poisoned so many people and eggs poisoned so many people?

(*Dr de Louvois*) Unfortunately, because of the complex diet that most of us enjoy it is fairly uncommon for us to be able to specifically implicate a food as the cause of an outbreak. If you have a twenty-first birthday party or a wedding reception it is much easier. As we all know, what we have eaten in the last 24 hours is so varied that it is impossible to incriminate the actual food, so a league table such as you describe would be attractive but impossible.

(*Professor Duerden*) What we do is publish the known outbreaks and relate them to particular foods and those are published in the Communicable Disease Report on a regular basis, but the evidence is not structured in a way that could create a league table. It would be misleading to do it in that way because it would over-emphasise the ones where there are larger outbreaks and under-estimate the small outbreaks.

Ms Keeble

184. In section 3.2.5 you refer to food with longer shelf lives. What food is that? Is it the UHT meals or the precooked meals or the soups in cartons that last forever?

(*Professor Duerden*) Obviously it is a way of life now that there is more food that is produced with these long shelf lives and held in a chilled way. I think it is work that Professor Humphrey has been involved in about survival and multiplication of the organisms.

(*Professor Humphrey*) Pasta has a shelf life of 12 weeks. It is all the foods you mentioned and many more.

185. The UHT stuff and all of that?

(*Professor Humphrey*) UHT products are largely sterile, but ready made meals, soups and ready to eat chilled meals will often have a shelf life of certainly days and often weeks.

186. Is it because people are storing them too long? Do they keep the UHT meals for too long?

(*Professor Humphrey*) Many chilled meals will require subsequent heating and will retain a large bacterial population.

Chairman

187. What about the meals that do not require chilling, the microwave long life meals which I live on here in London during the week, should I eat them still? I am very worried now.

(*Professor Humphrey*) If everything is always done correctly then there is no problem. It is just that with the vast volume of stuff that is produced and reheated at home there is always going to be the 0.1 per cent of instances where your microwave does not work properly. There is always going to be something that at some point will go wrong, whether it is in kitchen hygiene, manufacturing hygiene, storage or whatever. Is that comforting?

188. Yes. Can I ask a couple of specific questions on *Salmonella*. You talk very helpfully about contaminated feedstuffs as a means of *Salmonella* in poultry and you recommend that there should be a requirement that all feedstuffs for poultry should be completely free from *Salmonella*. Is that feasible? Can it be achieved easily?

(*Professor Humphrey*) I think we have to recognise that the UK has made marked improvements as a result of the 1989 Food Processing Order and we are down from maybe ten per cent compound feeds positive to around three per cent. It is a laudable aim. It will never be possible to have all feeds *Salmonella* free.

189. Never?

(*Professor Humphrey*) It is unlikely given the scale at which they are produced and given the range of foods which are produced. I think it is fair to say that almost all foods leaving a feed mill will be Salmonella negative, but there is a possibility of re-contamination on the farm.

190. Feral cats?

(*Professor Humphrey*) Yes, and rodents and birds. The industry itself recognises this which is why much of our poultry feed is now treated with organic acids which do work when the bird has eaten the feed to kill any salmonellas that might be there.

191. One of the interesting issues as well about *Salmonella* relates to animals in transport. The conventional wisdom now is that the length of journey is not what matters so much as the number of times that animals are loaded and unloaded. What you say here seems to contradict that, particularly if they are kept in the lairage. There is increased incidence of *Salmonella* in lamb carcasses. You say that "it is likely that similar data would be obtained with other food animals." Clearly there is not the research to prove that it would be. How important is that? Should we be concerned about that issue?

(*Professor Humphrey*) I think it all has a part to play. The longer the animals have to travel, the more they are handled—I hesitate to use the term stress because I am not sure I fully understand it. There is ample evidence now that if you make animals less comfortable, if you crowd them together, if their fleeces are less clean, then the carcasses will be more contaminated. They also become more susceptible to colonisation with microbial pathogens as a consequence of the stresses induced by transit and handling.

192. You have just used the word stress. You say, "The stress of transportation of animals ... can lead to the recrudescence of latent salmonella infections."

(*Professor Humphrey*) That is right.

193. Stress?

(*Professor Humphrey*) Not all transport is stressful just as not all meals are dangerous, but clearly this is stuff we are quoting from America, Australia and New Zealand which shows quite definitively that the longer you transport animals, the more they are crowded, the longer they are in the lairage the more likely they are to have diarrhoea, the more likely they are to be *Salmonella* positive, the more likely the organisms are to spread from one animal to another.

194. Thank you. *Campylobacter* was identified in 1977 for the first time. It has now become the most common cause of bacterial enteric infections in England. I believe that is the case. You only set up your major reference unit this year, 20 years on. Why so long?

(*Professor Duerden*) I will ask Dr Rowe to answer that. We have been doing an enormous amount of work over those 20 years on it. It is just that in the last year there was a definitive labelled reference facility set up. Dr Rowe?

195. Could you explain to the Committee as well what typing the strains actually means?

(*Dr Rowe*) Fingerprinting is the nearest term—I would use—for tracing or epidemiology. Let us say straightaway that PHLS was one of the co-discoverers of *Campylobacter* in 1977 in our Worcester laboratory.

196. Worcester?

(*Dr Rowe*) I think Hereford might have had a little part to play as well! We have been in the game since 1977. One of the things about *Campylobacter* when it first appeared was that it was an extremely difficult organism to grow in the laboratory and so it was right and proper that for the first ten years or so I think most of the emphasis was actually put on getting better methods so that you could culture the organism. That takes us up to 1987 or thereabouts and then although the PHLS did not set up what you might formally call the national reference centre, our laboratories in Preston and Manchester had indeed set up fingerprinting techniques which were available and were being used in research projects in order to understand the epidemiology. It is true that it was not a national reference centre and it is true that in the last three years we have set up a national reference centre at Colindale, within my own laboratory, which can provide a national service with detailed typing. I should say at this stage that there is only one other country in the world that has such a set up and that is Canada. There is no other national reference service with this method of typing the organism. So we are at the front of the game, although you may suggest we have been a bit tardy. We would hope to convince you that we have not been too tardy.

197. I cannot speak for the Committee, but I am convinced!

(*Dr Rowe*) Thank you. The systems of typing that were available needed modification, in our opinion, and we devoted ourselves to this so that we could do them speedily, cheaply and were able to handle large

[Chairman *Cont*]

numbers of organisms which will be necessary for the next stage in the investigation of this particular infection.

198. You have done a preliminary assessment of your 1996–97 pilot study. What has that shown?

(*Dr Rowe*) The object of the pilot study in Wales was to take the new system, which we developed in my laboratory, to the field to see if it really worked. Did it really produce the goods? It did. It showed up clusters of infection including general outbreaks that would previously have been regarded as sporadic cases. So it really did work and we have now extended that to include the northwest region and made available for the rest of the country a similar service should the local situation demand. You may ask why we did not provide the service for the whole of the country at the same level and the answer is quite simply resources and prioritisation. We feel that it is much more important now to take the human data from two regions and study the food chain right back to the food animals so that we really do get an understanding of the epidemiology of this organism, and not just a great mass of human data covering the whole country. We have provided an emergency service as required, on demand, for the rest of England and Wales and, furthermore, I would add we are exporting our system to the Scottish reference laboratory in Aberdeen so that they will be using our typing system and the Central Veterinary Laboratory at Weybridge has also showed considerable interest in taking up our scheme so that hopefully in a very small number of years we will have the same system working throughout this country.

199. How much do we actually know about *Campylobacter*? How is it transmitted? Is it food? Is it interpersonal contact?

(*Dr Rowe*) There is no doubt that it is a foodborne disease, that it is zoonotic, that it is the farm animal that is the host and so the food chain is extremely important. It is thought that poultry represent the main vehicle of infection but that needs investigation and for that the detailed typing will provide an answer. The bovine animal certainly has *Campylobacter* in its intestine, waterborne outbreaks have been described, milkborne outbreaks have been described and it is not impossible that person to person spread takes place because we know that the infective dose for *Campylobacter jejuni* is probably 500 organisms.

Mr Mitchell

200. Is there any indication of which kind of poultry are more disposed to it, battery reared or free range?

(*Dr Rowe*) No.

Chairman

201. You say 75 per cent of chicken carcasses are infected.

(*Professor Humphrey*) At least. That is probably an under-estimate.

202. So it is pushing on 100 per cent?

(*Professor Humphrey*) It is an organism which appears to have the chicken as one of its natural host. It is an avian organism.

203. So it is a natural occurrence?

(*Professor Humphrey*) It can be prevented. MAFF are funding a study looking at that and we are working with the industry to explore that. To answer Mr Mitchell's question, whether it is battery, free range, broiler, mum and dad, breeders or whatever, they will almost always be colonised.

204. It probably always has been before 1977 too.

(*Professor Humphrey*) Yes.

(*Dr Rowe*) Because *Campylobacter* is found in poultry it does not of necessity mean that that a particular type is a pathogen for humans and that is one of the gaps in our knowledge. We have not carried out sufficient studies to fingerprint the types in the poultry and the types in humans and to say that there is the route of infection and this is what we intend to do in the next stage of our development.

205. We cannot say at this stage the high incidence of *Campylobacter* in poultry is actually a risk to human health, is that right?

(*Professor Humphrey*) Perhaps not quite in the way that you would like us to. All we can say is that case control studies, outbreak investigations in a whole range of countries, both European and elsewhere, have identified under-cooked chicken as an important vehicle in human infections.

206. Of *Campylobacter*?

(*Professor Humphrey*) Yes, and I think Dr Rowe's point is very pertinent, that we know not all strains that are found on chickens are always found in humans. What we do know is some are.

207. But good cooking solves all the problems, does it not?

(*Professor Humphrey*) As with any other food, Chairman.

Chairman: We will now turn to cheese. Mr Hurst?

Mr Hurst

208. You are very strongly against the sale of unpasteurised milk in your evidence and yet a survey carried out on cheeses found that the majority of those did not specify in terms of labelling whether the origin was pasteurised or unpasteurised. Have you made representations to the Government about that survey and the consequences of it and what was the reaction?

(*Dr de Louvois*) As with all of the surveys that we do the results get passed to the Department of Health and to MAFF. The survey that you referred to was one that we carried out when the Dairy Products Hygiene Regulations came into effect primarily because of concern about the level of *Listeria* contamination within soft cheeses, which we were pleased to report was remarkably low. The whole debate about use of unpasteurised milk either for straight consumption or within food products is, as you will know, a very energetic one and our feelings were that if we came out and said "Ban the lot" then the argument was likely to be lost, whereas with milk we feel very strongly that it should be banned. It contains *E.coli* O157 therefore, there seems to be

[**Mr Hurst** *Cont*]

little argument about that. We felt that as far as cheeses were concerned the shopper should be entitled to know when they buy cheese from a delicatessen counter where it comes from in terms of its country of origin and whether it has been made of raw milk or pasteurised milk. Two-thirds of the samples that were sold on cheese displays were not thus labelled. Also, where they were labelled there was not a separation between pasteurised milk cheese and unpasteurised milk cheese and we know from outbreaks that cross-contamination is a factor between the two sorts of cheeses. We felt this was a reasonable and prudent step.

209. Let us move on to thermisation. You stated it is not a safe process. Is it a practice that is increasingly in use, and have you evidence of food poisoning associated with that process?

(*Dr de Louvois*) We do not know because that is trade information whether thermisation is an increasing practice. What concerns us are the number of occasions when thermisation is implied or referred to as a process which is suitable and capable of removing pathogens. It does not. In answer to your last question, yes, there are recorded outbreaks of infection associated with thermised treated milk products.

210. Again, is this another area where you would take the view that there should be effective labelling as to whether or not that process has been used or are you saying the process should be outlawed?

(*Dr de Louvois*) Not at all. It is too easy to be overzealous and say anything that has not been cooked to destruction has to be outlawed. Our view is that the public should know what it is that they are buying so that they can make a valued judgment.

Mr Collins

211. I wonder if I could just press you a little on your recommendation that unpasteurised milk should be banned completely. I declare an interest in this. I was born and brought up on a dairy farm and for the first 20 years of my life I drank unpasteurised milk. On your statistics in Section 3.2.4, if you put them the other way round, 80 per cent of the samples of the survey that were done were perfectly compliant with hygiene regulations, 89 per cent of outlets had no evidence of significant pathogens, 96.5 per cent of samples had no evidence of significant pathogens, and on the table on the next page, outbreaks of *Salmonella* or *E.coli* last year came to a grand total of five traced to raw milk, yet you want to ban the sale of green topped milk entirely. Is that not an example of a sledgehammer to crack a nut?

(*Dr de Louvois*) We do not believe so. If one applied the same criteria for *Salmonella* contamination of eggs at between one in 600 and one in a 1000 you might take the same attitude. When one realises that we consume 30 million eggs a day in the UK then one per cent suddenly becomes an astronomic number of contaminated eggs. If we had a situation in which raw milk was always contaminated then the debate would not take place. What we are saying is that it is inappropriate for the public to be subjected to this form of Russian roulette when we are dealing with organisms that actually kill people. Some outbreaks of *E.coli* 0157 have a mortality of 30 per cent.

212. I understand that. Just looking at your statistics in Table 2, Section 3.2.4, you are actually saying that there were 18 outbreaks of *E.coli* O157 in pasteurised milk in 1996, none at all that you can trace to raw milk. You have to go back to 1993 to find an instance where you traced *E.coli* O157 to raw milk and that is only 11 people affected, but you are not proposing to ban pasteurised milk.

(*Dr de Louvois*) The point we were making is that the number of foods which can be positively incriminated in terms of an outbreak is a very small proportion of the total. This does not mean these were the only individuals who were affected with unpasteurised milk. This was an outbreak which by its happenstance and levels of investigation and everything else enabled the investigators to implicate unpasteurised milk as the vehicle. The question about pasteurised milk is a separate one. Here we are talking about either post-pasteurisation contamination or we are talking about pasteurisation that has not succeeded and, as you will be aware, there is major concern about on-farm pasteurisers which were installed widely 15 or 20 years ago and have long since come to the end of their reliable life. They are now a cause of concern to the whole of the dairy and health industry. In fact, it may be impossible on a day-to-day basis to determine the effectiveness of an on-farm process before the milk has been consumed.

213. Are there any cases of *E.coli* O157 being traced to raw milk out of the first 11 months of this year?

(*Dr de Louvois*) Yes, two.

214. Turning to your evidence in Table 1, Section 1.6, you are talking about your food surveillance studies and you make a reference there to a recent study conducted earlier this year with LACOTS into butchery products and butchery premises. Could you tell us something about that? Are there any preliminary conclusions or anything else you can tell us about that?

(*Dr de Louvois*) When Professor Pennington presented his interim report it was very clear that there was a major concern about the quality of butchery premises following the Lanarkshire outbreak. The one question that the lay media as well as the scientific community were concerned about was whether Lanarkshire could occur anywhere else. Was Mr Barr representative of a widely spread problem? Along with LACOTS we carried out one of our regular surveys which looked at butchers' premises in terms of the raw meat and cooked meat sold and the equipment they used, the level of hygiene training that the staff received and the results in the context of Professor Pennington's recommendations. I could copy that to the Clerk, if it would help you. We have just analysed the findings with regards to the Pennington recommendations. Professor Pennington recommended that all butchers should have separate displays for raw and cooked meats. More than 90 per cent of butchers in the 1,400 premises that were surveyed, including some in Scotland, had either totally separate displays

[**Mr Collins** *Cont*]

or single displays in which the foods were kept totally separate. He also recommended that there should be separate refrigeration. 85 per cent of the 1,400 premises either had separate refrigerators or had totally separate areas within fridges and the same applies to the use of separate slicers, wrapping areas, chopping areas and so forth. So judging by these 1,400 arbitrarily selected butchery premises, which are clearly a very small proportion of the total, most of the recommendations of Pennington are already common practice amongst butchers. Notwithstanding that, we isolated *E.coli* O157 from chopping boards, from meat slicers and from raw meat in a small proportion of the butchers' shops. Not surprisingly, we also isolated *Salmonella* and *Campylobacter* from raw meats and occasionally equipment. So the level of contamination within butchers is not high. The compliance with the recommendations from Professor Pennington is high. However, the down side is that within 11 per cent of the premises that were surveyed there were staff who used bare hands to handle raw and cooked meat and in 29 per cent of premises there was one or more member of staff who served raw meat and then served ready to eat meat without washing their hands. It is exactly the same situation as regards unpasteurised milk. There is a small problem area within the industry that leads to the sorts of problems that we see in outbreaks of infection.

215. In terms of the contamination that you did find, was that confined to those premises that were not fulfilling Professor Pennington's recommendations or were there some that did which nonetheless had some infections?

(*Dr de Louvois*) The latter.

216. So merely complying with Pennington is not enough to guarantee there will not be any infections, is that right?

(*Dr de Louvois*) I think that applies to any recommendations. The situation with *E.coli* 0157 is that the organism comes through on certain carcasses even if they are identifiable carcasses and the system that the butcher puts in place is one in which he attempts to ensure that there is not cross-contamination within his premises. We did not get *E.coli* O157 from any cooked products in any of these premises, but we did get it from a cooked meat slicer.

217. In Table 1, Section 1.6 you refer to a total of five studies funded by the European Community, the Co-ordinated Food Control Programme. I wonder if you could tell us, as a result of those studies and the evidence that has been collected on an EU-wide basis, how you would compare the UK record on the sort of issues we have talking about this morning with that of other Member States?

(*Dr de Louvois*) Firstly, they are not EC funded.

218. They are EC co-ordinated but they are not EC funded.

(*Dr de Louvois*) That is correct.

219. That is a helpful and important correction! But then it is also true to say that everything that happens under the EU banner in this country is paid for by the British taxpayer.

(*Dr de Louvois*) The EC Co-ordinated Food Control Programme started in 1993 as an exercise designed to give the European Community a feel for how the microbiological and chemical quality of food varies across the Member States. There is a chemical component as well which we are not involved in. The simple answer to your question about how we compare with the rest of Europe is we do not know because there have been no published reports from Brussels on any of the five annual studies. In the UK in order to get maximum value the PHLS has gathered together all of the data that are available to us, that is all of the data from our laboratories and increasingly from non-PHLS laboratories in England and Wales and particularly in Scotland. We now analyse these data and present the results to the Department of Health and to all of the people involved in the surveys, so that they may get useful information out of it. Those studies that warrant it are then published in peer review journals. We have just published the data from the 1994 study on salads.

220. So even though it is called the EC Co-ordinated Food Control Programme there is no Brussels publication of co-ordinated food programme results?

(*Dr de Louvois*) We have not seen any yet.

221. Do you expect to see any results?

(*Dr de Louvois*) The assurance at the beginning was that this would happen. One has to say that the beginning of the programme is so complex that even if the results were published it is difficult to believe that they would mean very much. We divided the 1993 foods that they had collected into 32 different types. The EC collected data on five food groups. One of the groups was edible ices. It included everything from ice lollies through to slush puppies right the way through to dairy ice cream. All the data from that went into one box and so identifying that soft-whip ice creams were a problem would never have come out. We analysed the data and, sure enough, as we would anticipate, soft mix ice creams are of a lower microbiological standard than the branded blocks. If you look at ice creams across Europe, as we know from holiday makers, there is wide variation. So comparison between countries would not really be possible.

Mr Collins: Maybe it is an issue to be raised tomorrow.

Mr Mitchell

222. It sounds like a useful exercise.

(*Professor Duerden*) It could be useful.

Chairman

223. Can I just finish off with two brief questions. I was intrigued by your comment in Section 1.1 in relation to *Campylobacter* that individual vulnerability to *Campylobacter* varied greatly. It just triggered a prejudice of mine which is that, in fact, we are breeding a nation of sissies who cannot stand food poisoning any more. We should expose young people to more pathogens to make them tougher in their old age. Is there any value in that view at all?

[**Chairman** *Cont*]

(*Professor Duerden*) My wife has said that from time to time. I think we have to be aware, yes, that in all infectious disease there is individual variation and susceptibility. It is a biological situation. As individual human beings we do react differently to pathogens and yet with these organisms thousands of people become infected and become ill, some of them very seriously ill, some of them die. That is the spectrum that from a medical point of view we recognise as being a tradition of infectious disease. In this sense food related infection is no different from other types of infection where you have everything from mild illness through to death.

224. So you have this argument with your wife on a regular basis and you win it!

(*Professor Duerden*) No comment!

225. I was worried about your last recommendation where you talk about the particular vulnerability of economy products to contamination, but I was also intrigued by paragraph 3.2.6 where you are talking about food safety risk associated with the catering industry. You talk about a study which showed that individuals who ate out regularly were three times as likely to suffer from *Campylobacter* poisonings than those who did not. If it is primarily poor people who eat economy foods and primarily rich people who go out to eat, who is at greater risk, the poor or the rich?

(*Professor Duerden*) I do not know if that is necessarily the case. How many people eat out in relatively low price lunchtime canteens—

226. So it is the canteens you are worried about.

(*Professor Duerden*) I do not think we have evidence beyond what is stated here.

(*Dr de Louvois*) If one looks at teenagers and people in their early twenties, they eat out all the time. I think "grazing" is the current phrase that they apply whether it is a hamburger, fish and chips or whatever. As I mentioned to Mr Hurst, the situation with sausages is a cause of concern.

227. So it is the cafés of the country who are the double-whammy, poor food in, badly cooked, double risk?

(*Professor Humphrey*) When you rely on somebody else to cook your food you live in the hope that they do it properly and most times they do, but there are enough outbreaks to demonstrate that maybe sometimes they do not.

(*Dr de Louvois*) A study that we did recently on rice showed that the critical point in terms of buying rice from an ethnic restaurant was the length of heating immediately before they served it to you. So it was not a good idea to go into an ethnic restaurant and buy your rice dish when the football crowds had just come out because they would be churning them out at a speed of knots .

228. I thought the conventional wisdom was to go to restaurants with a high turnover because the food did not stand around so long.

(*Dr de Louvois*) It is the practice in ethnic restaurants, for example, that rice is three quarters cooked and then has the final heating just as the customer orders it and so they have great tubs of rice in the back kitchen.

(*Professor Humphrey*) That is common practice. It is not possible for them to have cooked the sausage to the degree that the data that we got from the sausage suggested. There is a lot of pre-cooking of all foods.

Chairman: Gentlemen, we could go on all day. Thank you very much. We are most grateful to you. There are many things you said in your evidence to us that we have not been able to take you up on. I am intrigued by many of your ideas, sewage sludge etc. There are many ideas we have not explored. They will not be ignored, I can assure you, just because we have not asked you about them today. Thank you very much.

Memorandum submitted by the Chairman of the Advisory Committee on the Microbiological Safety of Food (ACMSF) (C 24)

The ACMSF was set up as an independent Committee to advise Ministers and wishes to submit independent evidence to the Agriculture Committee.

The pages which follow were prepared at my request by the ACMSF Secretariat and with the help of a small group of the Committee. They provide a summary of the work of the ACMSF and communicate some of the main concerns of the Committee about the way forward.

As chair of the ACMSF, I think it appropriate that I add some personal comments. The ACMSF has published a number of important Reports on key aspects of food safety. Each of these contained a number of recommendations to Government, industry and other parties. We believe it is now timely to examine how these recommendations have been acted upon and would suggest that this be considered during the Agriculture Committee's inquiry.

Looking to the future, I believe that the ACMSF has an important role to play in support of the proposed new Food Standards Agency. The ACMSF has a powerful mix of skills—lay members, medical and veterinary experts, industry technologists, and public health and enforcement specialists. Microbiological safety is not a matter for microbiology experts alone. Matters such as kitchen layout, cooking, personal hygiene or factory operations can be vital and we benefit from experienced advice. Our Reports reflect this mix in containing both scientific and practical advice and recommendations. We are confident that we can work comfortably and usefully within the spirit of the proposed new Agency.

My overriding concern is that we need a renewed effort to reduce the incidence of food pathogens in apparently wholesome food from animal sources. Ordinary household and small caterer hygiene cannot be expected to deal on all occasions with the unacceptable incidence of food pathogens found in the output of animal production and spread further in slaughter and primary butchery of carcasses. A major new approach is needed with a creative mix of persuasion, partnership, alliances and enforcement.

Equally, all food handlers need to be trained *and* supervised to ensure that food poisoning dangers are avoided. It is unlikely that we will see completely pathogen-free animal production in the foreseeable future. Self-protection by consumers will continue to be essential and we will need new approaches to communication and advice for the public. In commercial food enterprises, more widespread training is essential, combined with proper management and supervision, and these aspects should be an essential part of a licensing and enforcement regime.

I must also note that the ACMSF foresees other food safety threats, currently emerging or which may appear in the future, which may require new preventative approaches. The Committee, whilst stressing the major role of raw animal products as carriers of pathogens, is also concerned about the potential for other produce—eg fruit, vegetables and salad crops—to become contaminated with food pathogens.

This Memorandum describes in brief some issues which the ACMSF believes will need early attention from the Food Standards Agency. The setting-up of the Agency will provide an opportunity for a fresh start on food safety. It is vital that the opportunity is seized as the diverse and complex aspects of safety assurance will need a sustained programme if we are to see an improvement on the present situation. We hope, therefore, that this Memorandum will be useful to the Agriculture Committee in its inquiry. If required, I would gladly give the Agriculture Committee further views on improving food safety, drawing on my own experience and that derived from the members of the ACMSF.

Summary prepared at the request of the Chairman of the Advisory Committee on the Microbiological Safety of Food

ADVISORY COMMITTEE ON THE MICROBIOLOGICAL SAFETY OF FOOD

1. The Advisory Committee on the Microbiological Safety of Food (ACMSF), which is an independent, non-statutory body appointed to advise UK Health and Agriculture Ministers, was established in December 1990, on the recommendation of the Richmond Committee,[1] with the following terms of reference:

> *to assess the risk to humans of microorganisms which are used or occur in or on food and to advise Ministers on the exercise of powers in the Food Safety Act relating to the microbiological safety of food.*

2. The ACMSF is concerned with the whole food chain, from plough to plate, advising specifically on the microbiological aspects of food safety. The current membership of the Committee is at Annex A.

THE COMMITTEE'S REPORTS

3. The Committee publishes Annual Reports.[2,3,4,5,6] These review the topics which the Committee has addressed during the reporting period, chart progress on implementing past recommendations, and summarise ongoing and planned future work. Each Report also contains a Register of Members' Interests.

4. The Committee has also reproted to Ministers on a number of specific topics, viz vacuum packaging,[7] *Salmonella* in eggs,[8] *Campylobacter,*[9] VTEC,[10] and poultry meat.[11]

Report on Vacuum Packaging and Associated Processes[7]

5. In this Report, the Committee drew the attention of industry, enforcement authorities and consumers to the potential risk from botulism if proper care was not taken over the production of extended shelf-life vacuum and modified atmosphere packaged chilled foods. The Report recommended that, in order to prevent growth of *Clostridium botulinum* and the production of toxin, chilled prepared foods with an assigned shelf-life greater than 10 days should contain one or more controlling factors in addition to chill temperatures. Controlling factors in this context included heat treatment, acidity and salt levels, and water activity. The Report made recommendations on the level of such controlling factors.

6. It also recommended that there should be a comprehensive and authoritative Code of Practice for the manufacture of vacuum and modified atmosphere packaged chill foods, with particular regard to the risks of botulism. This should cover, amongst other things, awareness and use of HACCP. HACCP is referred to on a number of occasions in this Memorandum. It is an acronym for Hazard Analysis Critical Control Point and is a systematic technique for the management of food hygiene practice in all aspects of the food chain.

Salmonella in Eggs[8]

7. The Committee's Report on Salmonella in Eggs assessed the importance of eggs as a source of human *Salmonella* infection. The Report contained recommendations on the storage and handling of eggs and for an industry/retailer Code of Practice to be prepared and introduced. There were also recommendations covering the maximum time after laying by which eggs should be consumed, the refrigerated storage of eggs in the home, and the use of pasteurised egg for egg dishes intended to be eaten raw or only lightly cooked.

8. The Report contained an unequivocal endorsement of the Chief Medical Officer's (CMO's) advice that people should avoid eating raw eggs and that vulnerable groups should eat only eggs cooked until both yolk and white are solid. The Committee called upon Government to review the continuing need to compulsorily slaughter laying flocks infected with *Salmonella enteritidis* and to update existing Codes of Practice for the control of *Salmonella* in laying flocks. There was a recommendation for periodic surveys to monitor trends in *Salmonella* infection in eggs and topics were identified for future research.

Interim Report on Campylobacter[9]

9. A major difficulty with *Campylobacter* is that most cases are sporadic and unconnected, making it very difficult to establish the role of different foods. A key thrust of the ACMSF's Interim Report on *Campylobacter* was the need for further research and surveillance on the organism, specifically in relation to typing, isolation and identification, disease causing potential, prevalence, transmission and infection—to fill gaps in the understanding and knowledge of this important food poisoning pathogen. The Committee also impressed upon industry and consumers the crucial importance of giving proper attention to effective temperature control, thorough cooking, the avoidance of cross-contamination, education and training. It was also recommended that all sectors of the food industry should adopt a HACCP-based approach to the control of potential microbiological hazards.

Report on Verocytotoxin-Producing Escherichia coli (VTEC)[10]

10. The Committee's VTEC Report contained a clear warning of the dangers of this group of micro-organisms, including *E.coli* O157, reflecting their capacity to infect at low dosage and the particularly harmful effects of the illness itself. The Report warned of the dangers of VTEC in meat products and strongly endorsed the CMO's advice on the thorough cooking of burgers.[12] It recommended the adoption of a HACCP-based approach to prevent contamination by, or the survival of, VTEC.

11. A strong message from the Report was that the sale of raw milk to consumers for direct consumption should be banned in England, Wales and Northern Ireland as it is in Scotland. The vital importance of carefully controlling pasteurisation in relation to milk and milk products and the need to avoid post-pasteurisation contamination were also stressed. The Report emphasised the importance in public health terms of good practice in managing outbreaks and the need for thorough epidemiological investigation. Other recommendations called for research and serveillance to fill gaps in knowledge and assist in the development of preventative and control measures.

Report on Poultry Meat[11]

12. The ACMSF Report on Poultry Meat included details of surveillance showing that over one-third of retail chickens sampled carried *Salmonella*, a situation which the Committee regarded as unacceptable. The Report took a comprehensive look at all aspects of the production and handling of poultry meat from farm to fork and contained recommendations which the Committee believes will serve as a sound basis for improving the microbiological status of poultry meat through action at each stage of the supply chain. A call was made for ambitious but achievable targets to be set for bringing about improvements and the ACMSF concluded that it saw no reason in principle why the prevalence of *Salmonella* contamination in the finished raw product should not within the next few years be greatly reduced using existing available technology. The longer-term aim should be the effective elimination of poultry meat as a significant source of *Salmonella* in the nation's food supply.

13. The Report contained specific recommendations for improved monitoring and research aimed at widening knowledge of *Campylobacter,* improving the design of broiler farm and hatchery buildings, upgrading feed mills, heat-treating poultry feed, testing broiler flocks for *Salmonella,* improving both the machinery and the environment in which birds are slaughtered and processed, and more informative labelling of raw poultry products. Particular stress was again laid on the contribution which HACCP can make to the achievement of significant improvements.

Current Working Groups

14. The Committee currently has two Working Groups, considering the questions of foodborne viral infections, and microbial antibiotic resistance in relation to food safety. The creation of the former Group, which has been concerned in particular with Small Round Structured Viruses and hepatitis A virus, reflects the Committee's view that foodborne viruses are increasingly involved in human infections. The latter Group was set up because of ACMSF concern about the rising numbers of human infections with *Salmonella* which show multiple drug resistance. Its remit is to assess the likely scale of the problem of human and animal infections caused by antibiotic resistant micro-organisms in the food chain, and the role and importance of food and food production as a source of antibiotic resistant mircroorganisms in humans. The Group will also be considering the need for any action to protect human health. Both Groups expect to submit their reports early in 1998.

THE WAY FORWARD

15. The ACMSF, in addition to the Reports it has issued, has recently held a special discussion to bring together its current areas of concern. These are discussed below.

16. Despite the depth of current knowledge about food hygiene and safety and the tremendous commitment of resources to improving the situation, and notwithstanding the quality of advice emanating from expert bodies such as the Richmond Committee and the ACMSF, food poisioning notifications continue to rise. There appear to be a number of reasons. The increase may be due to increased notification, but it is probably not the only reason. The Committee believes that a major factor is the extent to which output from the agriculture sector too often contains food poisoning pathogens. The microbial status of a primary animal product production is unsatisfactory and needs to be addressed. The ACMSF believes that very significant improvement is possible even tough this may take time. A more hygiene-orientated culture needs to be introduced into the animal product processing environment, particularly in areas like slaughterhouses and in the primary processing of animal carcasses.

17. All sectors of the food industry need to be properly trained and supervised so that good hygiene practice, including proper processing, temperature control and prevention of cross-contamination, becomes second nature in food enterprises whether large or small. The Committee has regularly emphasised the HACCP principles need to be applied at every stage of the supply chain. It needs to be understood that there is no practicable way of routinely testing food for pathogens prior to consumption. The laboratory tests for pathogens are lengthy and a tremendous number of samples would be needed in order to obtain a representative picture of possible contamination in large batches of food. Proper HACCP-based hygiene procedures also protect against the possible danger of a symptomless human carrier of food pathogens existing within the work force. The concept of HACCP—which is now embodied in EU legislation—has also grown in a number of countries to highlight that correct food processing, distribution, storage and rigorous hygiene all have to be properly managed to ensure food safety.

18. Pathogens can and do emanate from raw agricultural materials. Moreover, the various sectors of food industry do not always take appropriate measures to ensure good hygiene practice and to avoid cross-contamination as produce moves through the processing chain. In addition, all too often there is a lack of awareness of the potential problems. Allied to this, enforcement of the required standards of hygienic practice has been disrupted as a consequence of mixed messages emanating from Central Government.

19. For the consumer, the message has to be that, for the foreseeable future, it must be assumed that raw food materials entering the domestic environment will on occasions contain harmful pathogens. Self-protection steps are therefore vital to avoid the risk of cross-contamination, particularly from raw to cooked foods. The other key messages are that thorough cooking and proper refrigeration make essential contributions to food safety. Cooking until the temperature at the centre of the food reaches at least 70°C for at least two minutes will kill most harmful bacteria that could cause food poisoning. Chilled storage below 5°C ensures that any foodborne pathogens present cannot easily multiply.

Tackling primary animal production

20. Food safety starts on the farm and this is too often overlooked. A key objective must be to reduce the carriage rate of pathogens in food animals. In this connection, it is important to recognise that human pathogens are likely to be carried asymptomatically by apparently healthy livestock and also continue to be present in a proportion of eggs. An acceptable balance has to be struck between the pressures created by commercial production systems and the health of stock. This means, amongst other things, good husbandry, a clean environment, uncontaminated feed, robust biosecurity arrangements, high standards of hygiene and the prudent use of disease control mechanisms, including antimicrobials. The Committee regards it as necessary that trend targets are agreed with sectors of the animal production industry for the reduction of pathogen carriage over the years ahead.

Slaughter and primary processing

21. Slaughtering and primary processing practices—including transportation and handling of livestock—are major determinants of the microbiological status of meat. Action is needed at all stages to ensure the most hygienic transport conditions, a reduction in levels of stress, the presentation of clean animals for slaughter, and proper attention to the risk of faecal cross-contamination during slaughter, evisceration, cutting, processing etc. Buildings, plant and machinery need to be able to be easily and effectively cleansed to reduce the potential for the spread of contamination. Equally, awareness of the risks and of the need for proper hygiene procedures amongst management and operators needs to be increased and enforced. Again, HACCP procedures offer the best route for achieving the required performance level.

Other foods

22. While most of the ACMSF's concern is focused on products of animal origin, it should not be overlooked that there are risks elsewhere. Hygienic handling and the prevention of cross-contamination from raw to cooked foods is vital with all food materials. There is also growing concern about fruit, vegetables and salad crops which can be contaminated from animal or human sources and from polluted irrigation water. The disposal of sewage sludge to agricultural land presents a potential pathway by which consumers may become exposed to microbial pathogens from UK production. Moreover, access to world suppliers of often exotic foodstuffs and the rapid movement of such foods from distant countries to the UK, together with the difficulty of controlling production practices in producing countries, present new public health challenges.

Licensing and enforcement

23. Although it has not been involved directly in the debate about licensing, the ACMSF supports the need for licensing to be introduced. Producers of food are uniquely placed to cause widespread illness in the community if things go wrong. Without stifling enterprise, it should be an exacting process to be able to set up as a food business. All too often, the degree of control necessary to ensure public safety is missing. The judicious use of licensing with prior approval conditions may have a vital role to play in improving the performance of all sectors of the food industry and available options should be carefully appraised.

24. In tandem with a licensing policy, goes diligent and effective enforcement. There is the general impression that there has been too light a touch on the enforcement tiller over recent years. The ACMSF believes that more rigorous enforcement is now necessary but this will have to be applied in a sensitive and balanced way. Food producers need to know that there are rules for the safety of consumers with which they must comply and that such rules will be rigorously but sensibly enforced. The Committee has been concerned about the resources made available to local authorities to carry out this more vigorous enforcement and feels that consideration should be given to the introduction of a modest licence fee, the proceeds from which could be used to improve the enforcement effort.

Training

25. Comprehensive and effective training of those engaged in the production, processing, handling and sale of food is essential if its microbiological status is to be improved. Current enforcement of the requirement to provide training is regarded as inadequate. The training and education ethos must start at the boardroom and must be ensured down to all levels of employee. Well trained managers, supervisors and employees have to be combined with proper supervision to ensure safe food production. The goal must be that good hygiene and food processing practice become second nature to those employed in the food industry in its widest sense.

Public information and advice

26. Under present conditions, and probably even in the future, consumers need to assume that raw foodstuffs entering the home could well contain food poisoning pathogens even though appearing completely wholesome. Intensified efforts are necessary to help consumers understand and apply the self-protection steps in the home which will reduce the risk of food poisoning. The Committee is aware of the wealth of information and advice which is available to consumers on food safety matters; yet still there is no sign of a significant drop in the incidence of food poisoning. This suggests that a new approach may be required to ensuring the more effective delivery of important food safety messages and advice. The development of fresh partnerships and alliances between the Food Standards Agency, the media, industry, enforcers, consumer groups and the education sector will be essential to bring this about.

Research, surveillance and epidemiological investigation

27. It is unfortunate but true that only a relatively small number of food poisoning cases are properly traced back to a specific food. This fact undermines the development of reliable public health policies. The Committee therefore believes that we must continue to expand our knowledge of foodborne pathogens, their origins, disease-causing properties, transmission routes, distribution, prevalence, susceptibility to control measures etc. This requires the maintenance of comprehensive programmes of research and surveillance centring not only on the major food poisoning pathogens in food animals and in man but also on the critical food production methods and processes. The ACMSF regards it as vital that the necessary resources are put into greatly improving the epidemiological investigation of foodborne illness.

HACCP

28. Over-arching all the measures to improve food safety must be a strong commitment and adherence to the principles and practice of HACCP and increasingly it must be a centre piece of enforcement. HACCP is not a set of rules. Rather, it is a philosophy, as applicable in the home as in the small or large food enterprise or on the farm or in the processing plant. HACCP must be applied at every stage of the food chain—in current jargon, from farm to fork or plough to plate—to identify, assess and control or eliminate the microbiological hazards associated with food production and handling.

29. The Committee has heard on a number of occasions how difficult it is to get HACCP understood and applied. It believes, however, that there is no other way and that greater efforts and ingenuity are needed to communicate the benefits of this approach—which has become increasingly recognised in other countries facing similar problems—to owners, managers and operators involved in the food sector.

CONCLUSION

30. The ACMSF strongly believes that the advent of the Food Standards Agency provides an opportunity to make a fresh start on policies for the improvement of the microbiological safety of food. It is an opportunity we cannot afford to ignore. The Advisory Committee on the Mircobiological Safety of Food, with its unique mix of membership skills, believes that it can make significant contributions to the workings of the proposed Agency and stands ready to do so.

October 1997

Annex A

ADVISORY COMMITTEE ON THE MICROBIOLOGICAL SAFETY OF FOOD

MEMBERSHIP

CHAIRMAN

Professor D L Georgala	Independent scientific consultant. Retired Director of the Institute of Food Research

MEMBERS

Mrs F Anderson	Nurse tutor and consumer representative
Mr D Boon	Director of Environmental Health and Trading Standards, London Borough of Croydon
Mr D Clarke	Independent consultant to the food and catering industries
Dr R J Gilbert	Director of Food Hygiene Laboratory and Deputy Director of Central Public Health Laboratory
Dr A M Johnston	Senior Lecturer, Royal Veterinary College, University of London
Dr M J Painter	Consultant in Communicable Disease Control, Infection Control and Surveillance Unit, Public Health Laboratory Service (North West)
Professor S R Palmer	Regional Consultant Epidemiologist, Public Health Laboratory Service Communicable Disease Surveillance Centre (Welsh Unit)
Dr T Roberts	Retired Head of Microbiology, Institute of Food Research
Ms B Saunders	Consumer consultant

Dr N A Simmons	Emeritus Consultant in Microbiology to the Guy's and St Thomas' Hospital Trust; Honorary Senior Lecturer in Microbiology, St Bartholomew's and the Royal London School of Medicine and Dentistry
Dr W C S Smith	Reader in Public Health, University of Aberdeen and Honorary Consultant in Public Health Medicine, Grampian Health Board, Aberdeen
Mr R Southgate	Technical Executive, Northern Foods plc
Dr G Spriegel	Director of Scientific Services, J Sainsbury plc
Dr M Stringer	Director of Food Science Division, Campden & Chorleywood Food Research Association
Dr T Wilson	Consultant Bacteriologist, Northern Ireland Pubilc Health Laboratory, Belfast City Hospital
ASSESSORS	
Dr R J Cawthorne	Ministry of Agriculture, Fisheries and Food
Dr R J Harding	Ministry of Agriculture, Fisheries and Food
Dr C H McMurray	Department of Agriculture for Northern Ireland
Dr P Madden	Scottish Office Department of Health
Dr R Skinner	Department of Health
Mr D Worthington	Welsh Office
SECRETARIAT	
Medical Secretary	
Dr A Wight	Department of Health
Administrative Secretary	
Mr C R Mylchreest	Ministry of Agriculture, Fisheries and Food

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[3] Advisory Committee on the Microbiological Safety of Food (1994). Annual Report 1993. HMSO, London.

[4] Advisory Committee on the Microbiological Safety of Food (1995). Annual Report 1994. HMSO, London.

[5] Advisory Committee on the Microbiological Safety of Food (1996). Annual Report 1995. Department of Health.

[6] Advisory Committee on the Microbiological Safety of Food (1997). Annual Report 1996. Department of Health.

[7] Advisory Committee on the Microbiological Safety of Food (1992). Report on vacuum packaging and associated processes. HMSO, London.

[8] Advisory Committee on the Microbiological Safety of Food (1993). Report on *Salmonella* in eggs. HMSO, London.

[9] Advisory Committee on the Microbiological Safety of Food (1993). Interim Report on *Campylobacter*. HMSO, London.

[10] Advisory Committee on the Microbiological Safety of Food (1995). Report on verocytotoxin-producing *Escherichia coli.* HMSO, London.

[11] Advisory Committee on the Microbiological Safety of Food (1996). Report on poultry meat. HMSO, London.

[12] Department of Health (14 February 1991). Sir Donald Acheson's advice on cooking beefburgers.

Examination of Witness

Professor Douglas Georgala, Chairman, Advisory Committee on the Microbiological Safety of Food, examined.

Chairman

229. Professor Georgala, thank you very much indeed for coming. I wonder if you could start just by introducing the work that the committee does in broad and general terms for the benefit of the Committee?

(*Professor Georgala*) Certainly, Chairman. I am Chairman of the Advisory Committee on Microbiological Safety of Food (ACMSF). It was set up in 1990 as an independent committee to advise Government on all aspects of microbiological safety of food. I was appointed Chair early last year after having been the acting Chair for some time before that. The committee, as you can see from its membership, has a wide range of skills and is quite unusual in that sense. They are microbiology experts, medical experts, veterinary experts and also lay members and industry members on the Committee. So that gives a colour to the sort of advice that we are able to give to Government. A lot of our work is determined by our own choice of priorities. Members raise issues at the committee. We consider them and if we regard them as top of our priority we usually have set up a working group sometimes with co-opted members from outside, other experts and this working group would then lead to a substantial report and, in fact, those are listed in our submission. That has been one whole aspect of our work since the committee was founded. In parallel with that we also respond to requests from Government for advice on specific issues. We have had a number of requests over the years, things such as microbiological criteria for foods, questions about the pathogenicity of Listeria, which was an argument at one time, microbiological surveillance reports. We reached an opinion on it and advised government. So this is a two-way flow going on all the time. Most recently, I have to say, we were prompted very strongly to submit our memorandum to yourselves as an independent committee. We feel that we have assembled a view of some of the solutions to try and reverse the current situation. We also express in that what we regard as really unacceptable levels of contamination reaching the consumer, particularly in raw chicken, in eggs, in sausages, as we heard, and possibly in some other meat products and we believe this puts the consumer in the front line in defending against food hazards rather than being protected by the food supply. I think we will argue later that the food producer and processor should carry much higher responsibility in this situation. That was the core of our memorandum which we submitted plus views on the Food Standards Agency.

230. The memorandum was extremely helpful. I am most grateful to you for it. The way you described your priority setting as a committee sounded slightly arbitrary to me. Perhaps that is being unfair. You mentioned the poultry report. I would have thought you might have taken that rather earlier than you did as a committee.

(*Professor Georgala*) Our very first one was on eggs. It arose out of the Richmond Report and, in fact, eggs was a very high priority and was put to us by Government to work on. We then chose areas to go on and the date when the report is published is not necessarily the priority that we gave it because some of the working groups overlapped. We came to the poultry one quite early on, but after that we did the eggs report. There was concern about what is called "sous vide", which is the vacuum packing of precooked foods and the worry about botulinum raised that in our thinking. No, it is not arbitrary. It is carefully thought out by this very experienced group of people.

231. In your evidence to us you seem to suggest that we as a Committee should examine the extent to which your recommendations have been implemented. When we took evidence from MAFF earlier on in this inquiry we were led to believe that you yourself were conducting such a review of the implementation of your recommendations. Obviously there is no point in making the recommendations unless they are implemented. What is your actual advice to this Committee?

(*Professor Georgala*) We were prompting this Committee to agree that our recommendations contained a number of key issues that were worth examining with the various parties who would come before you. Members of our committee have pressed that we should have a programme looking at some of those ourselves and, in fact, we have taken the first step in requesting from Government for our January meeting opinions as to whether they think in each case progress is being made or not.

232. MAFF told us that you are conducting a review and you are doing it by asking MAFF to do it for you.

(*Professor Georgala*) There are only some aspects that we will get feedback on from MAFF because we will be looking elsewhere for advice, for example on what research has been undertaken and we may well call industry in to give us opinions.

233. Clearly, it is rather easier for you to ascertain what Government has done than it is to ascertain what industry has done. You do not have the resources necessary—

(*Professor Georgala*) We do not have the resources and we do not have powers either. We can invite people to come and talk to us, but we do not have specific powers.

234. You talked about the enforcement of the required standards of hygienic practice having been disrupted as a consequence of mixed messages emanating from central government. Could you give me some examples of that?

(*Professor Georgala*) I think that specifically comes through to us in relation to HACCP, which I am sure you will hear a lot about in evidence before you. We regard the philosophy of HACCP—I want to separate that from some of the bureaucratic problems behind it—as a key element in dealing with

[**Chairman** *Cont*]

the issues of food safety. We understand that for some time the Government has been recommending that it is done slowly to allow particularly smaller companies time to adjust to the requirements of HACCP implementation. We believe that pressure may have been justified at some time. We do not believe it should any longer. We regard HACCP philosophy at all levels, be it bureaucratic HACCP in large companies or simple HACCP for smaller enterprises as essential, we have been given clear evidence that central government requested a slow implementation of HACCP.

235. Do you think with the change of government that situation has changed?

(*Professor Georgala*) I do not know yet. I would sincerely hope so.

Ms Keeble

236. Your 1992 report on vacuum packaging and associated processes has produced some substantial improvements mainly through the code of practice which you recommended. That was presumably a voluntary code, was it?

(*Professor Georgala*) Yes.

237. Are you satisfied with the way in which that has been followed?

(*Professor Georgala*) Up to now. The proof of that is we have a complete absence of botulinum, which was a major concern and botulinum, of course, is a very special situation in which you have higher mortalities and the spread of vacuum packing was a great concern because of that and I am reassured by the fact that vacuum packed products are now safely sold.

238. Are you looking at the boil in the bag food?

(*Professor Georgala*) This is all sorts of foods where air is excluded. Vacuum packed examples would be bacon, for example. The "sous vide" dimension is a way of distributing food which is precooked and vacuum packed. To keep the quality of food it is very often desirable to keep air out. The botulinum organism likes the absence of air and that is why we were concerned about it.

239. Are you satisfied with the level of resources devoted by the government to research and surveillance in this area, specifically chilled food, since your report was published?

(*Professor Georgala*) I think it is not an area that easily lends itself to surveillance, but research I believe should continue for two reasons. Part of the advice in the end is based on the capacity of the unusual organism to grow at low temperatures. At what temperature and in what food compositions is it absolutely stopped from growing? We need to constantly be researching that. I know some research has gone on, but I suspect it needs to continue because the food industry itself is evolving new approaches to vacuum packed products. This is an interesting area. If you walk around retail outlets you will see a wide variety of products. Innovation in that area will continue and therefore I believe research should continue in the public domain.

Mr Hurst

240. Your committee reported on the matter of Salmonella in 1993. At that time the perceived wisdom was one in 600 eggs or their shells was thought to be contaminated. I understand surveys carried out in 1991 and again in 1995/96 indicate the proportion remains effectively unchanged. Where would you place the emphasis? Would it be on seeking to reduce the contamination in the eggs or would it be on training the public and caterers in appropriate ways of serving, cooking, providing eggs to the public?

(*Professor Georgala*) On both. In reverse order, we have strongly supported the CMO's advice ourselves and have repeated that advice, for example, in relation to the danger of using raw eggs and egg recipes which are not cooked. In a number of recipes for mousse or ice creams or mayonnaises it is recommended to use raw eggs. We believe that can be corrected and it would help in reducing the incidents from egg related products, but we believe that the incidence in eggs is too much. It can be one in 100 packs. One in 600 eggs is one in 100 six-egg packs. That is a drip feeding of contamination into kitchens. In a busy restaurant, for example, pathogens are being introduced regularly if it is one in 100 packs. We do believe that there must be an attack again on the incidence of Salmonella in eggs.

241. Leaving aside prairie oysters and certain things that by their nature are going to remain that way, how in practice can caterers adapt their processes to eliminate the problem?

(*Professor Georgala*) Pasteurised egg is available which is, I believe, appropriate for quite a few of the recipes and that is the recommendation which we make.

242. Are you in essence saying that if you had to place an emphasis on the two approaches, one is the attack on the problem with the egg itself and the other is the use of the egg, that realistically you think most progress can be made upon the use?

(*Professor Georgala*) The earliest approach could be made if we can get this advice to as many people as possible. The attack on the incidence, and this goes for chickens as well, I would regard as a medium-term project. Somehow or another the stream of contamination has to be reduced because we believe that with the normal handling of food day in, day out ordinary individuals in kitchens will make mistakes from time to time. The word roulette was used. In the roulette of food poisoning incidents you are relying on the consumer or the kitchen operator to be the absolute protection in this case. I think we have to change the balance there and somehow get that number down. It is not easy and I would hope the industry itself would be tackling this in its own interest.

Mr Mitchell

243. I do not want to sound like Mrs Curry, but the number of eggs infected is a small proportion of the total number of eggs and we still eat a hell of a lot of eggs. You say that caterers should pasteurise eggs. What about the home?

[**Mr Mitchell** *Cont*]

(*Professor Georgala*) The domestic consumer is every now and again receiving into the kitchen an object that carries on its surface or inside it a food poisoning organism and we all know the advice given to consumers, industry. Government gives lots of advice on hygienic handling of food, including the handling of eggs, but do you actually achieve that even in your own kitchens day in, day out, morning, evening, late at night? Probably not. So any step that can be taken to reduce the incidence of pathogens we believe will make a significant contribution to reversing the present level. Remember, the present level that was being spoken about this morning is by all accounts the tip of the iceberg; 80,000 recorded cases. That is only a small proportion of the total in the population.

244. Now you are beginning to sound like Mrs Curry! Does this mean that the figures that Alan quoted earlier on about the constant level not falling mean that this is something which is always going to be there in eggs and we cannot do much about it?

(*Professor Georgala*) My committee does not accept that. We believe that across the whole poultry industry—and I include poultry and eggs—there are practical steps that can be taken and they include investment, they include biological security, they include the surveying of breeding stock and broilers in the case of chickens but eggs as well and it is tough. It is a difficult industry to achieve this, but unless there is a determined and continuous attempt to do so you will not see an effect. I do not think that we should easily sit and accept this level of pathogens in our food supply going into the normal domestic or small catering kitchen. That is a general view in our committee.

Chairman

245. Turning to *Campylobacter* specifically. Your 1993 Interim Report called for the establishment of a central reference laboratory and you made reference to this in what you sent to us. You talked about the need for further research and surveillance on the organism specifically in relation to typing, isolation and identification, disease causing potential, prevalence, transmission and infection. That is about all the gaps that there are. I think you were sitting at the back during the PHLS evidence to us earlier. Do you think what they have done is timely enough and adequate?

(*Professor Georgala*) No. It took a long time. I do accept there are technical difficulties with typing. It is a very difficult area. I think you heard Dr Rowe explaining it and we have had explanations. It is difficult because the biology of that organism is not as well established, but it has taken time and, what is more, we believe it is not yet fully national.

246. We heard evidence making clear it was not national.

(*Professor Georgala*) Our recommendation was for a national scale. So not only is that not fully national but I still think we are concerned about the possible separation between the veterinary side of that and the public health, and I think a theme that will run through our view on this and other food poisoning issues is the need to bring together the veterinary and public health surveillance, typing and centres of excellence.

247. So that is a powerful argument for a Food Safety Agency?

(*Professor Georgala*) Absolutely.

248. Your 1993 Report was itself only an interim report. What further work are you planning? It seems to me you should be making your own recommendations on development of this area in the light of what has happened.

(*Professor Georgala*) We recognise that. For example, late last year we held a conference. I should have mentioned that the committee has been able to encourage the provision of funds from departments to allow us to hold specialist conferences and we have had one on viruses and we had one on *Campylobacter* and I think from that it will appear on our priorities through the coming year to revisit the subject because it is clearly the number one cause of food illness.

249. You have identified one weakness in the PHLS work on *Campylobacter*, the artificial separation of the two halves. It was a very specific list you gave in your evidence to us of the issues that need to be examined, typing, isolation, identification, disease causing potential, prevalence, transmission, infection. Are you satisfied the work they are doing is covering all those issues?

(*Professor Georgala*) Yes, but typing, of course, is central to that. Again, I clearly heard Dr Rowe emphasising that. That is the tool for allowing the tracing back to source and the connecting of apparently unconnected cases. That is the great difficulty with *Campylobacter*, it is that the large majority are apparently individual sporadic cases. We do not have the nice evidence of outbreaks over the years that we have had for *Salmonella*, to get a better understanding.

Mr Mitchell

250. In your 1995 Report you recommended labelling cheeses made from raw milk. The Government said it would issue guidance notices and we have just heard that two-thirds of cheese products are not labelled to tell us whether they come from raw milk or not. What should we do about this?

(*Professor Georgala*) Personally, because I understand the problems, I would like to see moves towards legal enforcement, but I think there are difficulties there. I am not a legal expert in terms of possible labelling requirements under Directives from Brussels.

251. Should we have made it compulsory?

(*Professor Georgala*) We should. There are practical problems because a lot of the cheese is sold loose and you then have difficulties in how you communicate that. We recognise that, but I personally would move towards a legal enforcement.

252. Is the problem here or in Europe?

(*Professor Georgala*) I am not certain. I could not comment on that. I do not know.

[**Mr Mitchell** *Cont*]

253. Have you had any feedback on the extent to which the public is following the advice that burgers should be cooked until the juices run clear or there are no pink bits inside? It seems to me that that is not always followed.

(*Professor Georgala*) We have not actually got a mechanism for feedback. We do not have any survey.

254. Nobody checks?

(*Professor Georgala*) We do not know of any checking. One of our members took it on himself to do a survey of the labelling of burgers, the cooking instructions, to see whether they would get to this point and he came back to us with evidence that in fact that was not happening in many cases, that the labels were not clear enough to guide the user down this road. We have sent that information with a request that it be acted on to key trade associations. We have no evidence as to the percentage of consumers who are reaching this objective.

Chairman

255. Who should have the responsibility of making sure that that actually happens because that is a very important point you have just made to us?

(*Professor Georgala*) I suppose one would point to MAFF and enforcement authorities.

Mr Mitchell

256. Let us move on to poultry meat. You reviewed the whole of the poultry meat food chain and made a number of recommendations last year to the industry. What has been their response? Have they followed the recommendations?

(*Professor Georgala*) We do not have specific information on that. As you know, we reported that a third of chickens carry *Salmonella* and many carry *Campylobacter*. It really is a dreadful situation. We believe that it is creating a potential for a trail of contamination into the home or into industrial kitchens. So our advice was very timely and in its response Government undertook to meet with industry to ensure the setting up of working groups in the industry to look into this. We will be asking Government what progress has been made on that, but we do not at this moment have that information.

257. You will come across the problem of what steps have been taken to deal with it only in a later report. There is no continuous invigilation, is there?

(*Professor Georgala*) We are not an operational committee. We meet as a committee. It is voluntary membership. We meet three times a year and our working groups on average are meeting once a month. We do not have an operational capacity in that sense. We are an advisory group.

258. Did you take account of best practice overseas where they are reducing the contamination of poultry meat?

(*Professor Georgala*) Yes. The one area of evidence we had concerns Sweden where there has been a concerted programme of *Salmonella* reduction which has been successful. Claims are made that they reach one per cent or less in *Salmonella* presence in poultry. We certainly took account of that as confirming our own view that something could be done. In addition, we had some evidence that in Northern Ireland the *Salmonella* level in poultry is much lower than in the rest of the UK and, incidently, the human incidence of *Salmonella* is lower. Again, we took that as some evidence that would support our view that things could be done in practice to reduce *Salmonella* in poultry.

259. So you think the lower incidence in Northern Ireland is due to better practice?

(*Professor Georgala*) We believe so. It is a very depressing chain of events in terms of the rearing of poultry. It is operations, it is investments in facilities, it is quality of feed, for example. We believe that feed should be free of *Salmonella*. I think I heard this morning the view that that might be impossible. We believe it should be made possible. We believe animal feed is part of the food chain. The Swedes, indeed, we understand have achieved that.

Chairman

260. I think that is an important point. The PHLS did say that ideally feed should be free but they thought there might be practical aspects why that would not be possible. When you consider the practical constraints on a farm I have a great deal of sympathy with them. Is 100 per cent a realistic target?

(*Professor Georgala*) I would not want to say that there is an absolute freedom that can be achieved in a free environment. Unless one is trying you will not improve on the present situation. Where is the practical end point? We believe quite a long way can be travelled down that road before you reach an absolute end point. Our committee is very practical. Rodents, birds, whatever are always threatening the security of farms. They have a real problem in that respect.

Mr Collins

261. I wonder if I could be a little bit provocative. I note, Professor, that in paragraph 23 of your evidence you say that "it should be an exacting process to be able to set up as a food business". When I look at the membership of your committee, which is undoubtedly very distinguished, I note that you have got representatives from Northern Foods, from Sainsbury's, that you yourself are a scientific adviser to Marks & Spencer, Dalgety and Northern Foods. Apart from a couple of consumer representatives there is no one who would know a great deal about farming and there is no one who would represent a small butcher. I wonder whether if those sectors had been helped on your committee perhaps you might have expressed a different view about wishing to increase the pressures on being in the food business.

(*Professor Georgala*) That could be so. We certainly have had inputs from smaller groups and we have farmers' views on some of our working groups.

262. Do they tend to say to you, "Well, hang on a minute, it is difficult enough out there making a living if you are a small butcher"?

(*Professor Georgala*) Absolutely. I am glad you are being provocative on that because I have to bounce back that we are aware of the implications of some of

[**Mr Collins** *Cont*]

our advice and we are concerned about it, but that is not our primary responsibility. In the end there are other bodies, yourselves included, or Government that have to weigh up the effect of this on people, on jobs. Given the situation with food policy and food poisoning which does not appear to be going down and we see the effect of large outbreaks on sensitive people, we feel we are tipping towards the precautionary approach. That has to be balanced against the effect on investment, on the capacity to be trained, on being able to cope with the demands of higher security. We have no illusion about it.

263. Having tweaked your tail a little perhaps I could ask you a question about your working groups. There is a reference in paragraph 14 of your memorandum to the fact that you have currently got two working groups considering the question of foodborne bile infections and microbial antibiotic resistance. I wonder if you could tell us about the scale of the problems that those two groups are looking at and whether there is yet any conclusions at all, even primary ones, on the nature of these problems that you might be able to share with us?

(*Professor Georgala*) Yes, they are two quite separate points and I will deal with them in turn. Viruses have been bothering us for some while because they are quite different from other organisms that cause problems in food. They do not grow in food but the food acts as a transmission system. The recorded infections in food from viruses appear to be increasing. We believed that was a reason to get better understanding of this most unusual organism in terms of food problems. We held a symposium with funding from the Department of Health a few years ago and invited experts to that to see if we could enlarge our understanding. That prompted us to say there was something we could do in improving understanding and coming up with preventative recommendations. We have not yet finished that. The report is very close to being finalised and it should come out early in the New Year and I think will enhance the understanding of protection against the issue of viruses.

264. I wonder if I could ask if the Committee could be sent a copy of that report, please?

(*Professor Georgala*) Certainly. If I move to antibiotic resistance. Dr Rowe gave us a presentation on the increased incidence of human cases of *Salmonella* that are showing multiple drug resistance to all the main clinical antibiotics; something like 4,000 human cases in 1996. It is not clear whether these come directly through food but they are very much connected with the food chain, coming from animal systems but possibly some cases to do with animal contact as well. It is for that reason that we chose to set up a working group, again with the different sets of experts, drawing people from outside of our committee including the farm and veterinary experts to try and identify the size of the problem in the food chain because we recognise it is only a small part of a much bigger issue to do with clinical episodes of resistance to antibiotics. That working group is three quarters of the way through taking evidence including some significantly different practices in Sweden and it will be trying to analyse those and come up with some sensible practical advice.

265. Is it likely in your view that the increasing transfer to the human population of strains of *Salmonella* which are resistant to antibiotics could be caused by excessive use of antibiotics in the treating of animals?

(*Professor Georgala*) I think that would preempt our conclusions, but antibiotics are significantly used in animal therapy and that we are looking at very closely.

266. I would not ask you to prejudge your conclusions!

(*Professor Georgala*) I think it is a significant issue that your own Committee will want to keep in sight, particularly given the evidence of the science of the subject that shows that antibiotic resistance can be so easily swopped around between microorganisms.

267. Finally, in paragraph 22 of your memorandum you refer to potential risks in fruit and vegetables resulting from the disposal of sewage sludge, polluted irrigation water. You mention there is growing concern about this. Is this something that you have studied? Do you believe there is yet sufficient objective information to begin to quantify the sort of risks that we are talking about?

(*Professor Georgala*) At this stage we are worrying about it because the evidence from different countries is of a growing capacity of fruit and vegetables to act as a vehicle for contamination they happen to pick up along the way. I think we heard this morning of international trade. There certainly was an episode of dysentery transmission around Europe a few years ago in lettuce and in the States within the last year there have been several episodes of *E.coli* 0157. There has been one quite large outbreak through unpasteurised apple juice and there has also been in recent times a worrying set of episodes with parasitic infection. That is different from bacteria. It is a small animal like a protozoan.

Mr Mitchell

268. And this comes via sewage sludge?

(*Professor Georgala*) It is the transmission of intestinal disease by fruit and vegetables, although most of the time we are worrying about animal products.

Mr Collins

269. So the vegetarians are not safe?

(*Professor Georgala*) We have sounded a warning about that and we are going to have to find ways of thinking about the subject. If I turn to sludge, of course our concern there is the changes that we face in the coming year of the increased disposal of sewage solids presumably on the land. In both our VTEC arena and in viruses we are concerned about the survival of those organisms in sludge which can get on to the land and can then act as a focus for further infection onto, for example, salad crops. So the issue both of survival and possible enforcement of segregation of this stuff from the food chain is one which we are getting growingly concerned about.

270. Given the changing practice on that last point has been enforced from Europe, presumably there must be European evidence of the practice and

[**Mr Collins** *Cont*]

results of the practice that they are saying we should now follow their example on. Is there evidence from other European countries or elsewhere of this problem arising?

(*Professor Georgala*) Turning it the other way around, there is no overpowering evidence that disposal up to now is causing widespread illness. That is reassuring. You must not assume that organisms are just dying out because they have been disposed of in that way. Viruses have quite a capacity for surviving in unusual conditions.

Mr Mitchell

271. I am not sure about what you are saying. Your evidence speaks of a potential pathway. Are you saying there is no evidence or is it not overwhelming evidence?

(*Professor Georgala*) We are saying there is not overwhelming evidence of illness to date.

272. Is there evidence?

(*Professor Georgala*) I am saying there is not.

273. What is overwhelming? Is there any evidence?

(*Professor Georgala*) I do not know of any conclusive evidence, but we face a new situation where we in this country are going to have sludge disposed in new ways and we are simply sounding a technical warning that some of the key microorganisms we have been talking about can survive through that process and we would be recommending that that be monitored and researched as this practice comes into operation.

274. Do we not need evidence fairly quickly? If there is evidence we should find it out because there is going to be an increasing importing of food given the fact that countries elsewhere, not just Europe, outside Europe, are actually using this practice and producing more food which is imported here. Do we not need to know?

(*Professor Georgala*) And some research has been undertaken and some members of our committee have been giving advice on that. We should have known by now.

275. So we will be in a position to come to recommendations?

(*Professor Georgala*) I would hope so. It is not a situation that I feel comfortable with.

Ms Keeble

276. Did you say that some members of your committee have been giving advice?

(*Professor Georgala*) Giving advice to bodies that are engaging in research.

Chairman

277. You yourself raised helpfully the question of imported foodstuffs and talked particularly about fruit and vegetables. You said to Mr Mitchell it was not sewage sludge in those foreign countries that was causing the pathogens to occur. What do you think the mechanism is?

(*Professor Georgala*) It is postulated—and I think you will have seen that in the PHLS submission—that it usually comes through a watery route.

Mr Mitchell

278. Irrigation?

(*Professor Georgala*) Contaminated water, contaminated spray. If water is used for flowing fruit along channels and it is contaminated then it can transmit.

Chairman

279. Human sewage is quite a likely cause of that contamination.

(*Professor Georgala*) Absolutely. That is postulation. The big outbreak on raspberries in the States I do not think they have yet come to a conclusion on. That was imported raspberries from Guatemala. I do not think they have yet come to a conclusion on the source of the parasite, how it got into it. These are organisms that do not normally exist on fruit or vegetables and we would regard the fruit and vegetables as a vehicle.

Mr Mitchell

280. Is the research dependent on specific outbreaks?

(*Professor Georgala*) It could be or it could be due to carriers. You can have people carrying these organisms without actually being ill and excreting into the water stream and that then gets onto the food stuff. These episodes I am talking about which we are drawing from the USA are sufficiently impressive to sound a warning bell.

Mr Hurst

281. So generally speaking you favour the licensing of food businesses and the phrase you use is the "judicious use of licensing" which implies a limitation to it, but then you go on to say that it may have a vital role to play in improving the performance of all sectors of the food industry. If you are going to make a choice in the order of priorities, where would you start on the licensing chain?

(*Professor Georgala*) The Pennington Report identified one sector as high risk and I think you could extend that to any food enterprise where there is a mix of raw and cooked foods being served and you would maybe have to classify them on size. You might have to identify segments of catering, for example, but I think our general theme is that licensing and the capacity to have a revoking of a licence would provide a tool for enforcement officers that they lack at the moment.

282. Are they not open at the present time to inspection and enforcement and prosecution?

(*Professor Georgala*) Licensing allows a pre-assessment of the competency of the organisation to carry on safe food operations. At the moment anybody can set up a food outlet in the high street.

283. Would your licensing run back to the farmer?

[**Mr Hurst** *Cont*]

(*Professor Georgala*) That will be an interesting debate. I think the Committee was focusing on post-farmgate enterprises.

284. Although your submission to us says all sectors of the food industry.

(*Professor Georgala*) I think they would be willing to extend it to farming.

285. You would not be putting them as your first priority, would you?

(*Professor Georgala*) I think I would want to put smaller enterprises in the firing line.

286. It would be the small proprietor who would pay the price and the large operator who would once again not pay the price.

(*Professor Georgala*) They would all have to pay the price. Anybody in food would have to be licensed. The difference is a large operator would find it easier to achieve than the smaller operator and that we have to recognise. It would not be easy. It is a burden on small operators and I think legislators, executives will have to weigh up the consequences. The way in which one can enter and provide food to the unknowing public at the moment is not controlled and so licensing will mean the testing of competency before such a business begins.

Mr Mitchell

287. Butchers' shops should be licensed as well, should they not?

(*Professor Georgala*) That came out of the Pennington Report.

288. This is a means of imposing higher standards.

(*Professor Georgala*) It is a means of checking before somebody even opens up that they are competent and have the facilities and, secondly, of course, lying behind it is the revoking threat that if people do not keep up those standards the licence can be withdrawn. That is a heavy thing.

289. You say in your evidence that there is the general impression that there has been too light a touch on the enforcement tiller over recent years. It has been a law enforcing government over recent years. It believes in buyer beware and let the market rule. Are you expecting to change your role as a voice crying in the wilderness into something more effective with a more vigorously enforcing government?

(*Professor Georgala*) We give advice.

290. Will you shout your advice louder and clearer? You are saying things should be licensed. You want that advice to be accepted, do you not?

(*Professor Georgala*) Yes, and hopefully at least some aspects of it will be weighed up carefully, some aspects of it will be applied and extended perhaps on some sort of risk score of types of enterprise to ensure that this competency level I am talking about is raised.

291. Is it your impression that enforcement has been too light touched, too soft touched?

(*Professor Georgala*) Yes.

Ms Keeble

292. Do you think that the Food Standards Agency should include in its remit just microbiological aspects of food safety or other issues such as labelling and contents of food? Should it also include nutrition, diet and health? The second and the third ones that I mentioned are the ones that are in debate.

(*Professor Georgala*) That is outside our remit and we have absolutely not discussed that. I have a personal view on it. I believe nutrition should be included.

293. In all its aspects?

(*Professor Georgala*) No, I think priority decisions and resource decisions will dictate how much of that can be dealt with while these other issues are also being dealt with as high priority.

294. Do you think it is more important, though, to have an agency that can deal effectively with some of the issues that you have raised rather than take on all of the issues which perhaps it might not be so successful with, nutritional advice having been notoriously difficult in the past?

(*Professor Georgala*) My own view is that to leave nutrition out would leave some aspects of food and health off the table. I believe, even if it is on a long-term basis, that the Food Standards Agency should include that. That is a personal view and recognises the enormous priority issues because what we are dealing with is going to create enough pressure.

295. There is an issue related to that. I think I come at it from a different angle to my colleague, which is that quite a number of members of your committee have got roles as advisers to supermarkets, as indeed you have yourself. Do the supermarkets have any particular views or objections to the Food Standards Agency's role in relation to enforcement of more stringent standards for food safety, or do you think they are ahead of the game?

(*Professor Georgala*) I am sure you will be able to ask them. I do not know what their formal position is going to be on that and I do not have connections with the representative body, but I think that is something that is well worth extracting from them.

296. How do you think that the new agency will be able to make a difference to problems that have proved so difficult in the past? You do mention quite a lot about optimism and creative combinations of working and so on. How do you think that will actually work, and how do you think we will get the improvements?

(*Professor Georgala*) I am not saying I am optimistic, but I would actually portray it as something where it might be the last chance for some years to try and get an uplift and a greater co-ordinated view across the sector and greater numbers of people tackling these very difficult subjects. It is an opportunity to provide focus. Why has that not ever happened in the past? I think it is because people have not been trying hard enough.

297. Have you got views on the roles and the mechanisms?

(*Professor Georgala*) Yes, our committee feels very strongly that bringing together in some way the animal and human aspects of health is a key element

[Ms Keeble *Cont*]

and I think that was recognised by Professor Philip James. I was consulted by Professor James separately while he was preparing his paper and I support that fully. That is the key aspect if we are going to make progress. I think the theme of the food agency identifying the producer, the farm sector as part of the food chain and helping to uplift the public health vision of that sector will be an important step forward and I believe that is in the vision of the Food Standards Agency.

Mr Mitchell

298. How does the food industry and the production side of it view your committee? Would they see you as a bunch of impractical perfectionists making observations because you have got to safeguard yourselves or as a body which is making relevant practicable recommendations without a knowledge of their needs and developments in the industry?

(*Professor Georgala*) Firstly, can I just rebut the statement that we do it because we are protecting ourselves. I do not think those members on my committee are there with that frame of mind. They are really very experienced and serious people willing to give time to try and formulate a practical science base but also practical advice. If you look at our reports you will see quite a lot of practical advice. Not necessarily everybody can take that. If I move to the first part of your question, I imagine different sectors will have different views. We heard those involved in raw milk sales might be quite aggrieved.

299. You often get a view in industry of the bloody scientists, there they are making these recommendations. How can we implement them?

(*Professor Georgala*) I do not think if you looked at our membership you would say that they are bloody scientists. They are quite mixed. They are practical people and there are some lay people. That composition was set, I have to say, by Government before my time and I think it is quite sensible. I think you may want to ask other sectors that come in front of you.

Ms Keeble

300. Your membership has got a big role in relation to the large supermarkets and food processors and we certainly have noticed that their standards can be set higher than government standards, for example the standards that they require of slaughter houses. Do you think there is more of a problem with the smaller retailers and with the food safety processors there?

(*Professor Georgala*) Although we may be appearing to focus on smaller operators and many of the outbreak episodes appear to have been derived from smaller operators in catering or elsewhere, do not neglect the risk from big operators because a big factory can put many thousands of people at risk. If something goes wrong in a large factory you can have a very serious problem.

301. Like the Marks & Spencer sandwiches one?

(*Professor Georgala*) For example, although they do not appear often in the lists of cases that Dr Rowe sees, I would advise that big companies need to have the same environment and, of course, they protect themselves much more rigorously because of their own commercial interests. They should not be seen to be outside of this debate.

Chairman

302. I feel just a bit worried about your committee because it produces these marvellous reports which it has no powers to enforce whatsoever. You are casting your pearls before swine on a regular basis, so to speak, and now you have got the threat of this new Food Standards Agency. You say you think you have a contribution to make to its work. Do you? Is not its purpose the central part of your purpose? Can you take advantage of this new agency to enable your reports to be enforced or is it the curtains for your committee?

(*Professor Georgala*) We have no idea. We have not been consulted in that sense. I gave views to Professor James, but we await the White Paper with interest. I am sure that there are opportunities for modifying and remember, we are only one of quite a large body of advisory committees in the food safety area. There are others in the non-microbiological arena to do with genetically modified foods, for example and I think that the nature and role of the advisory committees would have to be reassessed and reconstructed into the Food Standards Agency. A view I have heard is that the Food Standards Agency will continue to need expert advice and there are committees available to do that. So the first step will be an organisational clarity of how we will relate to the Food Standards Agency. In due course then the role may have to change.

303. I think we will have to wait a little longer for the answer that we expected as the White Paper has been delayed. Thank you very much indeed for the time you have given us. We are very grateful to you.

(*Professor Georgala*) Thank you.

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AGRICULTURE COMMITTEE

FOOD SAFETY

MINUTES OF EVIDENCE

Tuesday 9 December 1997

CONSUMERS' ASSOCIATION
Ms Julie Sheppard and Ms Sue Davies

BRITISH RETAIL CONSORTIUM
Mr Nigel Matthews, Ms Janet Nunn, Mr Stephen Ridge and Mr David Smith

MARKS AND SPENCER plc
Mr Martin Van Zwanenberg

SAFEWAY STORES plc
Dr Alastair Robertson

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TUESDAY 9 DECEMBER 1997

Members present:

Mr Peter Luff, in the Chair

Mr Andrew George
Mr Alan Hurst
Ms Sally Keeble
Mr Austin Mitchell
Mrs Diana Organ
Mr Mark Todd

Memorandum submitted by Consumers' Association (C62)

INTRODUCTION

Consumers' Association (CA), publisher of *Which?, Health Which?* and other consumer magazines, is an independent consumer organisation with around 750,000 members. Food safety has always been a high priority for the organisation's work and we have provided a consumer perspective through our responses to consultations, representation on government committees and working groups and through policy reports and reports published in our magazines [*not printed*].

We initially proposed the establishment of a food agency in 1990, following concern over the salmonella and listeria food scares. In May 1996, we published a report in *Consumer Policy Review,* again, emphasising the need for such an agency . This was followed by our more detailed policy report, *A National Food Agency,* which was very supportive of the model proposed by Professor James. A copy of our response to the Food Standards Agency proposal is enclosed.

We have frequently reported on food safety issues within our magazines and details of the research we have conducted, often in partnership with other European consumer organisations, is discussed below.

In July 1996, we jointly hosted a national conference on *Human and Animal Spongiform Encephalopathies* with the North Yorkshire Group for the Study of Infection, which brought together experts from a variety of disciplines to debate the issue and gain a better understanding of the state of knowledge at that time. We have continued to lobby for effective implementation and enforcement of BSE controls and for greater openness and transparency of the Spongiform Encephalopathy Advisory Committee.

At a European level, we are members of the European consumer organisation, Bureau Européen des Unions de Consommateurs (BEUC) and have been campaigning for a greater priority to be given to public health within EU Food Policy, as our enclosed reponse to the Commission's Green Paper on General Principles of EU Food Law demonstrates. At an international level, we are members of Consumers International, through which we have observer status at the Codex Alimentarius Commission, and at its committees, including the Committee on Food Hygiene and the Committee on Food Labelling.

Recent Trends in the Incidence of Bacterial Food Poisoning

Reports of food poisoning continue to rise, but most disturbing, is the increase in virulent strains of bacteria, as has been demonstrated by the *E.coli* 0157 outbreaks in Scotland. There is still a great deal of uncertainty about the sources of the most common types of bacteria, including campylobacter, and the reasons for the continuing rise, which the Agency will need to address. A copy of Consumers' Association's most recent report on food poisoning trends, published in *Health Which?* April 1996 is enclosed [*not printed*]. The development of resistance to antibiotics by these common food poisoning bacteria is also a very concerning development, which needs to be tackled within the broader context of agriculture practices. In 1997, Consumers' Association took part in a European-wide testing project, involving other consumer organisations, which compared the presence of antibiotic residues in meat on sale across Europe. The results showed that some countries such as Norway and Sweden can produce meat that is free of antibiotics when the consumer buys it. The results, published in *Which?* March 1997 are enclosed [*not printed*].

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Significant Gaps in Current Scientific Understanding of, and Statistical Information on, Food Safety Issues, and Measures Which Could be Taken to Reduce These Gaps

It is essential that we learn from the BSE crisis and that food safety controls acknowledge the limitations of scientific evidence. A precautionary approach needs to be built in to the regulatory framework, that accepts that we can not always predict the impact that changes to methods of food production will have in the future. Genetically modified foods are one example where it is essential that the approval of individual products takes into account the long term consequences of their release, their interactions with the environment, and their possible impact on the diet as a wide range of foods are modified.

Consumers' Association recently hosted a round-table discussion, *Confronting Risk,* jointly organised with Unilever and Sainsbury's, which brought together a range of experts, from a variety of disciplines, in an attempt to gain a better understanding of how scientific uncertainty can be confronted. A report will be published shortly, and it is essential that this problem is addressed by the Agency. The reliance on scientific advisory committees alone, is not sufficient to ensure adequate safeguards for the increasingly complex nature of the food chain.

The BSE crisis also highlighted the dangers of failing to acknowledge a broad range of scientific opinion when assessing the risks posed from a disease, of which there remains limited understanding. There was not, for example, a public health representative on the Spongiform Encephalopathy Advisory Committee (SEAC) until December 1995, despite the possible public health implications. It is essential that the scientific advisory committees upon which the Food Standards Agency will rely, take a multi-disciplinary approach. This should include consumer representation, ensuring that consumer concerns are raised, and can be addressed by these committees, and also helping these committees to effectively communicate the current state of knowledge, and their advice to the public.

The Level of Food Safety Risk at All Levels of the Food Chain.

Whilst emphasising the need for rigorous safety controls at all stages of the food chain, from the farm, through to the final consumer, Consumers' Association has carried out several research projects, which have looked at the safety of a variety of foodstuffs. These surveys have often identified unexpected problems with foods on sale.

CHICKEN

In 1994, CA participated in a parallel EU food testing project, co-ordinated by International Consumer Research and Testing and part funded by the European Commission[1], which compared the microbiological safety of raw chicken across Europe. The results are shown in Table 1. With the exception of Sweden and Norway, salmonella was found in every participating country. In nine out of 10 countries, the results for campylobacter were higher than for salmonella.

Table 1
MICROBIOLOGICAL QUALITY OF CHICKENS

	Salmonella (%)	*Campylobacter* (%)
UK	36	41
Belgium	16	4
Denmark	51	36
France	25	53
Germany	26	22
Greece	4	0
Republic of Ireland	13	29
Italy	24	13
Netherlands	23	45
Norway	0	1
Portugal	48	60
Slovenia	11	47
Spain	8	26
Sweden	0	10

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[1] Parallel Food Testing in the European Union: Chicken. EC Subsidy: B5-1050/93/007938. International Consumer Research and Testing Ltd. September 1994.

The results show that the UK poultry had comparatively high levels of contamination with these bacteria, and that in contrast, Swedish and Norwegian chickens contained no salmonella, and relatively few contained campylobacter.

In October 1996, a report in *Which?* looked at the level of contamination two years on. The analysis showed that 20 per cent of chickens contained salmonella, and 37 per cent contained campylobacter, suggesting some improvement. However, the results showed that overall, half of the 160 fresh and frozen chickens that were tested, contained either campylobacter or salmonella.

As part of the research for this report, we also asked an experienced poultry meat inspector to go to the main supermarkets to assess the standard of the chickens that were on sale. He looked for obvious problems, such as bad bruising that could have been spotted before the poultry went on sale. Chickens were picked out that needed further inspection: 46 whole chickens, four poussins, and 40 chicken portions were bought from the eight leading supermarket chains on two afternoons, in two areas of the country. After further examination, by a poultry expert from the Royal College of Veterinary Surgeons, 32 of the 90 chickens were found to be "unfit for consumption".

Cooked Ham

In 1996, we took part in another joint European testing project, which investigated the microbiological quality of ham across Europe[2]. This was reported in *Health Which?* in October 1996 and a copy is enclosed [*not printed*]. Seven of the 120 UK hams, contained *Listeria monocytogenes.* Two other samples contained other strains of Listeria. Only two countries had results worse than this; Spain and the Netherlands, as shown in Table 2. The samples were also tested for *Staphylococcus aureus,* which was found in one pre-packed sample of ham. The total plate count found in 21 samples was found to be "unsatisfactory" based on Public Health Laboratory Service guidelines, and as indicated below, nine per cent of samples contained high levels of enterobacteriaceae suggesting poor hygiene.

Table 2
MICROBIOLOGICAL QUALITY OF COOKED HAM

	Number of samples	*Enterobacteriaceae High Levels* %	*Listeria monocytogenes* %
UK	120	9	6
Austria	122	1	3
Belgium	99	0	2
Denmark	100	2	0
Finland	123	0	2
France	106	20	1
Germany	101	16	1
Greece	100	6	6
Ireland	117	0	1
Italy	120	3	0
Netherlands	100	0	10
Portugal	120	9	1
Spain	99	0	14

Sandwiches

Earlier this year, as part of a *Which?* report looking at the quality of food at tourist attractions, we included a spot check of foods likely to be bought at these premises. Of the 25 sandwich samples bought, five contained food poisoning bacteria. Although the sample was very small, the level of contamination was surprisingly high. The bacteria found included: *Listeria monocytogenes* in a tuna sandwich, and in an egg sandwich from different premises, *E coli* in chicken baguette, *E coli* and *Staphylococcus* in an egg sandwich and *Staphylococcus aureus* in a ham baguette.

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[2] Parallel Food Testing in the European Union: Cooked Ham. EC Subsidy Number: B5-1050/95/00014. International Consumer Research and Testing. September 1996.

The appropriateness of the methods and resources employed to minimise food safety risk at various points of the food chain

These results have increased our concerns about the standards of control at various points of the food chain. A high and unsatisfactory level of chickens are contaminated before they reach the home. Our survey of supermarkets was also concerning because it suggested that chickens were leaving the slaughterhouse to go on sale, when they should have been rejected.

This raises concerns about the understanding of food safety controls and the adequacy of their enforcement. There has been much concern over the adequacy of red meat controls, including enforcement of the Specified Bovine Material (SBM) controls. This suggests similar problems within poultry slaughterhouses where poultry meat inspectors may have to check as many as 100 chickens per minute.

The results of our cooked ham testing is also concerning: consumers who are vulnerable to Listeria may know to avoid soft cheeses and pâtés, but could be unaware of the possible risk from cooked ham.

APPROACH TO REGULATION

As highlighted by Pennington, food safety is a special case where failure to adequately regulate could have devastating consequences, and therefore where a more prescriptive approach to legislation is often necessary. Although we fully support the Hazard Analysis Critical Control Point (HACCP) approach to food safety, it will take time, particularly amongst smaller businesses, for a hazard analysis approach to be fully understood and implemented. This needs to be reflected within regulation.

Similarly, the importance of adequate enforcement can not be over-emphasised. BSE controls were brought in during the 1980s, but were not being adequately enforced at the time of the announcement in March 1996. It has to be ensured that food safety controls are adequately enforced, and that people responsible for implementing them, must be aware of the consequences if they fail to do so.

The previous government's emphasis on deregulation has been criticised for delaying valuable enforcement action, for example, by the introduction of a "minded to" notice procedure, delaying food safety enforcement action. Extra resources have been given to food safety enforcement, but the only way that it can be ensured that local authorities dedicate this to improving standards of food safety is by ring-fencing. Licensing of food premises, rather than the current system of registration, would also ensure that food premises had to reach a certain standard before they were allowed to operate. We have yet to see the proposal for the Food Standards Agency's role in this area, but believe that it is important that it can undertake an auditing function, and co-ordinates enforcement.

As Professor James emphasised in his report, it will be essential for the Food Standards Agency to take a "plough to plate" approach if we are to see food safety improve. BSE and the *E coli* outbreaks have both demonstrated the need to reduce contamination on the farm, as well as ensuring that there are not further opportunities for contamination at subsequent stages of the food chain.

Food safety implications of the presence of genetically-modified organisms in the human food chain, and the desirability and feasibility of labelling foodstuffs containing genetically modified material

Consumers' Association has recently published a policy document on genetically modified foods, *Gene cuisine—a consumer agenda for genetically modified foods,* which sets out in some detail our views relating to the safety of these new products. A copy of the report is enclosed [*not printed*]. Concerns about the adequacy of existing controls are discussed in detail in Chapters five and six.

Genetically modified foods are likely to have a huge impact on the food supply. Although there are only a few products on sale so far, the way that these products are controlled will set a precedent for future products. If they not adequately controlled, any adverse consequences will be irreversible.

It is clear, from quantitative and qualitative research that we have conducted, that consumers have substantial concerns about genetically modified foods. These concerns (discussed in chapter three of our policy report) include the long term consequences of genetic modification and the fact that it is interfering with nature. Focus groups held after the arrival of the genetically modified soya and maize in to the UK, showed that consumers were very wary about these new foods, and they wanted to be able to choose whether or not to buy them: *"I hope you don't show us something that's been modified that we didn't know about . . . I'd be furious because I didn't know and I should know"* was one comment that reflects the general feeling of the groups.

Our main concerns about genetically modified foods are summarised below:

- There are still considerable uncertainties surrounding the effects, both intended and unintended, of applying genetic modification to foods which requires a more precautionary approach to regulating these foods;

- There is no standardised method of risk assessment used throughout Europe which means that disagreements between scientists working in different member states can produce different risk assessments of the same product. This was demonstrated by the Ciba-Geigy Bt maize. Although the UK's Advisory Committee on Novel Food and Processes (ACNFP) did not approve the use of the unprocessed maize, because it felt the possibility of the antibiotic resistant marker gene, conferring resistance to bacteria, was "very low, but finite". The EU scientific committees overrode this decision, as they did not consider the risk to be significant.
- The piecemeal approach to evaluating the risks from genetically modified foods fails to capture the potential synergies and interactions of these foods once they are widely produced and consumed.
- The current regulations are not sufficiently comprehensive in their scope, for example, they omit genetically modified processing aids which are widely used.
- There is no statutory requirement for monitoring the impact of consuming genetically modified foods after products go on sale.

The labelling issue has become increasingly complex following the decision by the US soya producers to mix their genetically modified crop with the standard harvest. We have discussed the difficulties in providing consumers with clear information in the light of this failure to secure traceability throughout the food chain in our policy document (see chapter 6: Consumer Choice). Nevertheless, these problems do not qualify the right to know and choose. It is therefore essential that:

- all foods or food ingredients derived by the use of genetic modification are labelled using standardised terminology;
- an easily identifiable symbol is developed to assist consumer choice; and
- sensitive and reliable test methods are developed and validated.

We also believe that traceability is a safety issue. Unless these foods and ingredients can be traced throughout the food chain, it will be impossible to take any action should safety problems develop.

The Food Standards Agency provides an opportunity to ensure a co-ordinated approach to the regulation of genetically modified foods. Its remit, together with those of the advisory committees concerned, must be broad enough to ensure that all aspects of genetically modified foods can be considered.

24 October 1997

Examination of Witnesses

Ms Julie Sheppard, Senior Public Affairs Officer, Ms Sue Davies, Senior Policy Researcher, Consumers' Association, examined.

Chairman

304. I apologise for the delay in calling you in today. We were having quite a protracted discussion about the Committee's decision to hold an inquiry into the state of the British beef industry and the precise terms of reference for that inquiry. A press release will be going out about that later today or tomorrow, indicating the decision of the Committee to hold such an inquiry. Naturally I hope the Consumers' Association will be among those who wish to give evidence to that inquiry in due course; who knows, we may even see you again. I apologise: it is an important issue for the British agriculture industry at present and the Committee has decided it should inquire into it as a matter of urgency. I apologise for the delay. I am not quite sure who is in charge today: is it a partnership of equals?

(*Ms Sheppard*) Yes, it is; but I will lead.

305. Would you introduce yourself and your colleague to the Committee so we know who you are?

(*Ms Sheppard*) I am Julie Sheppard and I am a Senior Public Affairs Officer with responsibilities for food at the Consumers' Association. I am accompanied by Sue Davies, who is a Senior Policy Researcher, also with responsibilities for food.

306. May I start by asking some general questions about the work of the Consumers' Association in relation to food? It would help the Committee enormously if you could explain how it is you feel able to speak for consumers in principle and who your 750,000 members are. Are they just subscribers to Which? magazine or do they have more active involvement in the issues? Do they tend to represent the more affluent socio-economic groups with more of an interest perhaps in consumer durables than food issues?

(*Ms Sheppard*) Consumers' Association is the oldest and largest independent consumer organisation in Europe. I will try to explain how we operate. It is best understood if you think of the organisation in two ways. We have a non-profit wing which we refer to as the Consumers' Association. We also have a publishing company which is the Which? brand, for which we are probably better known. We have a dual mission. One is to ensure consumers have access to information so they can make decisions — that is largely fulfilled by our publishing company through our magazines and our books. We also campaign to bring about measurable improvements in goods and services and that is more appropriately dealt with by our campaigning, non-profit wing. We are independently funded, which is not always fully understood. We are entirely reliant on income from

[**Chairman** *Cont*]

the sales of our magazines and our books. Our current annual turnover is something in the region of £43 million. We have around 700,000 members but we have over one million subscriptions to all our magazines. Perhaps it would be helpful to say that we have four magazines: people probably know Which? but we also publish Health Which?, Gardening Which? and Holiday Which?. As far as our readership is concerned, it is fair to say that our average reader is probably middle-aged, middle-class, male and lives in the south east. Sixty-six per cent of our readers are male. However, we do lay claim to a much broader readership than that. Our readership is drawn from all social classes, all regions and obviously women do read our magazines. Although the largest number of readers is drawn from a fairly narrow social band, our readership does reflect other social classes and regions. When we undertake consumer surveys, we do not just survey our own members but all consumers. When we are campaigning for improvements in goods and services it would be perverse if we wanted those to be restricted just to our members. We are campaigning for all consumers. It is fair to say we have a reputation for thorough and independent research. We are only there to promote the interests of consumers. One of the ways we are able to do that is because we are independently funded and we are beholden neither to government nor to industry for our income. Obviously our magazines do not carry advertising, for example.

307. That is a fairly comprehensive answer to the opening question. You talk about surveys and you anticipated my next question because you said you do survey all socio-economic groups in the work you do. In that work you have done have you noticed any different balance of concern on food safety across different socio-economic groups? Do concerns vary with income?

(*Ms Sheppard*) The only fair answer to that is no, because we have not really looked at that in any detail. My understanding is that MAFF have done surveys looking at the different concerns of social groups on food safety. It might well be that you should ask MAFF for results of some of the surveys they have done.

308. You would not wish to speculate on the tendency possibly of a low income family to be more concerned about price, while a more affluent family is anxious about the quality issues.

(*Ms Sheppard*) We certainly have no evidence to support that claim.

309. Could you tell us what proportion of your activities are devoted to food safety issues and what expertise you have at your disposal?

(*Ms Sheppard*) It is very difficult to give you an answer to that with any great precision. We have six principle strategy areas and one of those is food so it is obviously one of our top priorities. In terms of human resources, we have a person working on Which? magazine who is largely devoted to food issues, another one on Health Which?. We have Sue Davies who works in Policy Research whose work is wholly on food, myself in Public Affairs. We also have a full-time European Officer and two thirds of her time is spent on food issues. Food issues also take up a considerable amount of the time of our director, Sheila McKechnie. I would estimate that something like 50 per cent of all the time we spend on food is probably related to safety issues.

310. What scientific and technical expertise can you call on?

(*Ms Davies*) We have a dietician who works on Health Which?. I have a degree in Home Economics and before that I worked in environmental health, so I have some experience of food safety. A lot of the time we rely on outside experts. Before we start any report we always consult widely. If we are doing a survey on food safety issues, for example, we would speak to enforcement officers, to industry, to relevant scientists such as the Public Health Laboratory Service. When we do testing work we always make sure that the laboratories we are using have a lot of relevant expertise and experience. We would always make sure we were using NAMAS accredited labs, for example. We also have a dedicated survey centre within Consumers' Association and they have a survey panel to which they refer to make sure the methodology they are using is the most relevant for the work we want to do. We also have an expert checker system where, before we publish any reports, we send out draft reports to about 10 experts for comments to make sure we are giving a balanced view.

Ms Keeble

311. I would assume that you are heartened by the new Government's statements on improving consumer representation on the advisory committees. Could you tell us how you think that the use of consumer representatives on advisory committees could be further developed?

(*Ms Sheppard*) We have continually campaigned to increase the scope of consumer representation within policy machinery. We have done that for two reasons. One is that we think it would help bring greater democracy into decisionmaking by increasing consumer participation in the various advisory committees, but also it would be quite important that the balance of interest which Government have to consider when they make a decision, was more favourably skewed towards the consumer. That has been particularly so within the food area, particularly food safety, where we felt in the past that very often the power of the industry lobby has had great influence and that the consumer's voice has not always been heard. It is something we have welcomed. In terms of developing that and increasing it, we have supported Professor James's recommendations to the Government about the composition of the commissioners on the Food Standards Agency. We have wanted to see that consumer or public interest representatives are in the majority on that commission. We have also argued that consumer representatives ought to be on every committee and that there should probably be two at least. That sounds like a fairly minimalist demand but we need to remember that SEAC, which is the advisory committee on BSE has still yet to appoint a consumer representative.

[Ms Keeble *Cont*]

312. One of the things which has been particularly striking in this and in other work on the Committee, and has been quite a disappointment to me, is that the consumer input has been very limited. Given the very powerful vested interests which are involved in the food industry, the representation just has not been so powerful. Can you say how you feel the consumer voice can be strengthened as an independent voice vis-à-vis what are extremely powerful interest groups?

(*Ms Sheppard*) This is obviously an absolutely critical issue for the Consumers' Association. We have identified a number of factors which we think need to be in place before consumer representation can be really effective. The first and foremost probably is the issue of funding and resources. At the moment, unless you are a full-time employee of a consumers' organisation like CA, it is extremely difficult for you to acquire the expertise and the resources you need to be really effective on some of these committees. It is increasingly recognised that consumer advocates need to be trained; it is not part of our genetic inheritance that we automatically are effective committee members. There is a need for training of consumer representatives. Another difficulty we have encountered is that consumer reps need to be broadly accountable to a wider network of consumer organisations and individuals. There is absolutely no point in somebody being appointed to a committee as a consumer rep but not really having the credibility or accountability to the wider consumer world to enhance the decisions of the advisory machinery. The other thing we need to think about is that consumer reps need to be genuinely independent, they need to have the capacity to speak out when need be, even if that means treading on government's toes or industry's toes. That has not always been the case in the past. Those are the factors we have identified which appear to be important.

313. How successful do you think governments have been in conveying basic information on food hygiene to consumers and how could the impact of such messages be strengthened? Could you also say to what extent you think it is actually incumbent on consumers to take the responsibility for food safety and how far do you think it rests with the various industries?

(*Ms Sheppard*) We have not undertaken any specific work looking at the effectiveness of official food safety messages. There is a number of things we would want to say about that. First of all, there appears to be a failure to reinforce existing safety advice to consumers. For example, you will remember when the *Salmonella* in eggs crisis blew up, we all stopped eating raw eggs. That advice is still in place but you can still see recipes which do include raw eggs. There is a piece of food safety advice which is on the record but seems to have been forgotten and needs to be reinforced. One of the things which we have surveyed is the amount of trust which the public have in different sources of information. There is no point the Government pumping money into consumer information if people are disinclined to believe whatever they say for various reasons. We discovered that the consumer is much more likely to trust the information they get from health professionals or consumer organisations. That is a problem which needs to be addressed. One of the reasons why we have campaigned very vigorously for the creation of a Food Standards Agency is because we saw it as a one-stop shop for clear and authoritative consumer information on food safety; a very powerful voice which would drown out the cacophony of conflicting voices which you often hear on these issues.

Mr Mitchell

314. You say you want greater openness and transparency in the Spongiform Encephalopathy Advisory Committee. How do you propose to get this? At the moment it seems it works by report leaks, like last week; the Department is pushed into statements before it can make statements to the House of Commons and we have a mess. How should it work?

(*Ms Davies*) The Government has recently produced a review of SEAC. We commented on it but we were quite concerned that some of the problems we think have been long-standing still do not seem to be being addressed.

315. Like what?

(*Ms Davies*) There is still no consumer rep, although they have acknowledged that there is going to be a consumer rep, so we hope that will happen fairly soon. There are still no plans to publish the agendas of meetings before they happen, which happens with a lot of the other advisory committees, because it is considered that the information SEAC is dealing with is so sensitive. Although some issues are going to be commercially confidential, we have argued that is going to apply to the Advisory Committee on Microbiological Safety of Food and the Food Advisory Committee as well. We do not really see why this committee should be treated any differently.

316. Do you think they are treated differently because of the panic which prevails in the area?

(*Ms Davies*) That is one of the ways the consumer representative would help in that you can make sure the information is given out in a form which is relevant to consumers, in a balanced way which they can understand. We frequently find that we are asked to comment on what the practicalities are of the advice which SEAC is giving. For example, people want to know what they can eat or what action they can take; it is that sort of practical advice which we think they should be giving out. The should also be giving regular updates. There is a lot of press speculation, for example about the clusters of CJD cases, which if SEAC came out with regular updates on what the current state of knowledge was and what was still uncertain, would not be so much of a problem.

317. You did a survey in 1996 which said that people did not believe what Government were saying about food safety and they believed Government were too involved with the producers and not enough with the consumers. What do you put that mistrust down to, apart from reality?

[**Mr Mitchell** *Cont*]

(*Ms Davies*) The information we obtained from the survey was that the main concern was that people thought the industry interests were taking priority.

318. Were you prompting them into that statement?

(*Ms Davies*) We asked them an open question about trust in sources of information and asked them to rank the different sources of information. What was quite surprising was that the Government actually came below the food industry as being considered to be impartial. We did actually ask people to agree with some statements, for example, whether the Government withheld information about risks associated with BSE. Seventy per cent agreed with that statement. It was clear they felt that there had been confusion between scientific decisions and political decisions and that the industry influence was taking priority rather than public health issues.

319. Presumably you will be doing surveys to show where the situation improves when we have independent food advisory committees?

(*Ms Davies*) Yes. We do do these surveys on a fairly regular basis so it would be something it would be quite useful to do again now that we have a change in Government.

320. May we move on to European surveys? You mention participation in two surveys: one about antibiotic residues in meat on sale across Europe and one about the microbiological quality of chickens. Can you tell us about those surveys? Who did them and who analysed them?

(*Ms Davies*) With the one concerning chickens, we often work with International Consumer Research and Testing which receives money from the European Commission to set up European testing projects where consumer organisations from across Europe take part. With the chicken one we did in 1994 we bought 160 chickens. We had a market analysis so we always buy the chickens according to where people are most likely to be buying chickens when they go to buy them normally. Then we have them analysed for *Campylobacter* and for *Salmonella*. At that time we found that in the UK 36 per cent of the chickens contained *Salmonella* and 41 per cent contained *Campylobacter* bacteria.

321. How did we rate compared with the others?

(*Ms Davies*) What was quite interesting was that in Sweden chickens contained no *Salmonella* at all. They had quite low levels of *Campylobacter* with only 10 per cent contaminated. It was the same for Norway which had no *Salmonella* at all and only one per cent containing *Campylobacter*. The other countries such as France and Germany had fairly similar levels to us for *Campylobacter*. When we looked into it it seemed that one of the reasons for the low levels in Sweden and Norway was partly that their chicken production is less intensive, but in the case of Sweden they had had this *Salmonella* eradication programme since the 1970s, which seems to have proved very successful.

322. You put the differences down to raising rather than sale.

(*Ms Davies*) Yes; it seems to be. It was not clear in all cases what the reasons were but it seemed to be that where there was greater intensification then there was a higher level of contamination.

323. I am interested where people get the chickens from in Britain. Do they get them from supermarkets or butchers or Sowerby Bridge market?

(*Ms Davies*) They buy about 70 per cent from supermarkets and the rest from butchers and a small number from market stalls.

324. As much as that. Is that the same in other countries?

(*Ms Davies*) It varies. France buys mainly fresh chickens but Germany on the whole buy more frozen chickens than fresh chickens.

325. How does the price of chicken compare across Europe? Are the chickens much dearer in the countries with the best safety records, Norway and Sweden?

(*Ms Davies*) It is not something we have looked at recently but I have spoken to the Swedish consumer people about the cost of chicken in Sweden and they have said that although food in Sweden is a lot more expensive, chicken is still a comparatively cheap meat to buy there, even though they have managed to control the *Salmonella* levels.

Mr George

326. Thank you for your description of the surveys in which you have been involved. I was interested in your memorandum where you describe a survey involving the Royal College of Veterinary Surgeons in which 32 of 90 chickens were found to be "unfit for human consumption", which is a very high level, 35 per cent. That is 90 chickens. I do not know whether you undertook a further stratified sample or whether you felt that was representative, whether you felt that the confidence intervals on the findings were adequate, that you were satisfied that that was representative of what was going on in retail.

(*Ms Davies*) That survey was not intended to be representative of all of the chickens which were on sale. There were two parts to the work we were doing at that time. One was a repeat of the survey I have just described which we did in 1994, where we bought 160 chickens and then had them analysed for *Campylobacter* and *Salmonella*.

327. That was just in the UK but it was replicated in all of the other EU countries.

(*Ms Davies*) No. In this case we did the Europeanwide one in 1994 but we wanted to see how the situation had improved or not in the UK. The figures had improved slightly but we still found that 50 per cent of the chicken samples we bought contained either *Campylobacter* or *Salmonella*. What we did in the study you were talking about where we involved The Royal College of Veterinary Surgeons was to go out to supermarkets looking for chickens which should not have been on sale because they were not complying with the poultry meat hygiene regulations. What we did was to take an experienced poultry meat inspector with us. We went to the main supermarkets and bought any chickens which he spotted which looked as though they had signs of bruising for example or they had not been bled

[**Mr George** *Cont*]

properly. That was how we obtained the 90 chickens. Then we asked an experienced vet who specialised in poultry to have a look at the chickens and to see what he thought of them. He said that 32 out of that 90 were actually unfit for human consumption. What we wanted to look at there was to see whether chickens were actually getting out of the slaughterhouse and on sale on supermarket shelves when really they should have been rejected before they got to that stage.

328. Did you include independent retailers, butchers other than supermarket chains?

(*Ms Davies*) No, in this case it was just supermarkets. It was a followup to a survey which we had done in January 1996 which was just a spot check. We had heard from poultry meat inspectors that they were concerned that they did not really have time to check chickens properly and that they could be checking as many as 100 per minute to see whether they complied. We did a spot check where we just went to a few supermarkets in London where we had found a problem and we wanted to see whether it was happening on a larger scale.

329. It was really the opportunity to emphasise a point rather than to undertake a scientific stratified sample across the whole retailing.

(*Ms Davies*) Yes; that is right.

330. As a result of that have you discussed the findings with the eight supermarkets involved?

(*Ms Davies*) Yes, we did. Whenever we do a survey like this we always inform people if we do find a problem. We also discussed it with MAFF as well and gave them details of the samples we had found problems with. They were going to speak to the Meat Hygiene Service about it.

331. Have there been any beneficial outcomes from that that you are aware of yet?

(*Ms Davies*) Not that we are aware of. We probably need to do a repeat of the survey to find out whether the situation has improved.

Mr Todd

332. A question on your data. You said 50 per cent of the chickens had either *Campylobacter* or *Salmonella*, yet 35 per cent were defined as being unfit for human consumption within that particular survey.

(*Ms Davies*) There are two separate surveys. In one we bought the chickens and had them analysed for *Campylobacter* and *Salmonella*. The others were ones where we went out and deliberately picked out chickens and we did not have those tested for the bacterial contamination. We did them completely separately.

(*Ms Sheppard*) They are not the same chickens.

333. I understand that now. The definition of "unfit for human consumption" would therefore include any presence of *Salmonella* or *Campylobacter*, would it?

(*Ms Davies*) No, it would not because a lot of chickens which are on sale do contain *Campylobacter* and *Salmonella*.

334. But your adviser in this particular circumstance did not necessarily feel that made them unfit for human consumption.

(*Ms Davies*) The things he identified were things like the fact that the chicken was contaminated with undigested food, that it had not been bled properly, that there were feathers on the skin with dirt on them.

335. You said bruising and other things of that kind.

(*Ms Davies*) Yes.

336. You do not actually feel that the presence of these organisms themselves makes a purchase unfit for human consumption.

(*Ms Davies*) It is something we feel should be improved. The levels of contamination are still far too high. It is putting too much emphasis on the consumer.

337. To eliminate the bacteria.

(*Ms Davies*) Yes.

(*Ms Sheppard*) I am sorry I did not finish answering all Ms Keeble's questions about the role of the consumers and their contribution in food safety. We think that the consumer has a very important role to play in ensuring that food is safe. We think they should be the last line of defence against the bugs. At the moment, they appear to be the main line of defence. What we do not want is a situation where consumers are being asked to redress problems which are occurring much earlier on in the food chain which should be tackled where they originate.

Mrs Organ

338. May I come on to genetically-modified organisms? There is not a huge range of products on the market yet but consumers are feeling wary; they feel as though they do not know about them. There is a likelihood that we can have a huge input on our diet, on our food supply with genetically-modified organisms. Yet there is a whole range of advisory committees which are looking at GMOs. You explain in your memorandum that you are very concerned about this. Where do you think, with all these committees, that this system is failing us at present?

(*Ms Sheppard*) Putting this into context, we have done three pieces of consumer research on GMOs: March 1994, April 1996 and then April 1997. What we have noticed, taking that long-term shot, is a growing public wariness about genetically-modified foods. This probably relates to general anxieties about technological advances in the food industry, the probable erosion of consumer confidence in official assurances about long-term safety, following on from BSE and all the subsequent other food scares over the last decade and that the introduction of genetically-modified ingredients into food unannounced and over which consumers do not appear to be able to exercise any choice has fuelled anxieties. Taking that and looking at how the advisory machinery might consider that or reflect those particular consumer concerns, we felt that at the moment the responsibilities for GMOs are shared across a number of committees and all these committees have a very distinctive perspective, distinctive remit on GMOs. We felt that those remits

[**Mrs Organ** *Cont*]

are just far too technical and far too narrow to take into account some of the public anxieties and concerns that we have identified from our research. For example, the Advisory Committee on Releases into the Environment (ACRE), considers the implications of growing genetically-modified crops but does not consider the implications of growing those crops on the rest of agriculture or on the use of herbicides or how easily the growing of genetically-modified crops sits with other Government priorities about reducing herbicides and sustainability. The Advisory Committee on Novel Foods and Processes (ACNFP) has not been able, because of its narrow focus, to address issues concerning things like segregation and the traceability of genetically-modified ingredients in foods. It is these issues of traceability which have enormous impact on whether consumers will be able to have an informed choice, but also does have a food safety implication. If ingredients are not traceable, then if there is a food safety problem several years down the line, how are we going to recall it, how are we going to be able to identify it? The ACNFP, as it is presently constituted, is not able to address these issues. What we felt was that all this fragmentation of approach really does not enable Government to address the broader issues of principle which we know are concerning consumers.

339. Given that these advisory committees are focused in one particular area, do you agree that there is considerable overlap between them so that apparently things are not meant to fall in between two stools.

(*Ms Sheppard*) Through the gaps.

340. If you are not happy with the system as it is because it is too technical and too narrow, who do you think should be doing this and what kind of remit would this committee have? What would you want to see, acting on behalf of consumers?

(*Ms Sheppard*) All our views about increasing consumer representation will help address some of this. Obviously there is no point having a consumer representative on a committee which is not able to address consumer concerns; that is not very productive from our point of view. What we think is that there may need to be some sort of coordinating mechanism inside the Food Standards Agency which is able to take on board some of these broader issues of principle which I referred to earlier.

341. The ACNFP has recommended post-marketing monitoring of genetically-modified foodstuffs. Is there anything more than this needed?

(*Ms Sheppard*) Monitoring is very problematic. At the moment, this is only a voluntary requirement, it is not a statutory requirement. There needs to be much clearer guidance from the ACNFP about what monitoring is, what it is designed to do, what should be monitored, how it should be monitored, to what standards. It should also look at some of the very difficult questions relating to the use of genetically-modified soya, which is going to be used in very small quantities but in a very large spread of conventional foodstuffs. How are we going to monitor the effects of genetically-modified soya and its impact on public safety? That is going to be a very difficult question but because it is difficult it is precisely why the committee should be addressing it. It is not at the moment, as far as I understand it.

342. You have gone through the monitoring. What you have not talked about is information for the consumer and labelling so that they know what they are getting because that is where people are wary. Would you agree?

(*Ms Sheppard*) Yes, comprehensive labelling is very important and it is what all our consumers have told us they want. At the moment labelling proposals are in fact very limited and we estimate that probably most of the foods which contain genetically modified ingredients do not yet have any kind of label indicating that to the consumer. Comprehensive labelling is no substitute for food safety. We think that what we need in place first and foremost is a very robust system of regulation and control to ensure that foods, no matter how they are labelled, are in fact safe to eat.

Chairman: I have to draw things to a conclusion there, I am afraid. Thank you very much indeed for your time. We are very grateful to you.

Memorandum submitted by the British Retail Consortium (C52)

The British Retail Consortium welcomes the opportunity to submit evidence on this issue which it holds to be central to the proposed Food Standards Agency's remit.

THE INCIDENCE OF BACTERIAL FOOD POISONING

We are concerned at the rise in cases of bacterial food poisoning reported in the UK. While we believe that the system of notifying such cases has improved in effectiveness over the last decade, the underlying trend would seem nevertheless to be upwards. This is a cause of concern for all parts of the food chain, including retailing. Our developing culture, has seen growth in demand for composite food products at the same time as a decline in the general standards of education in the nature of food and food safety matters. This must be weighted against a background of consumer resistance to what is perceived as unnecessary use of chemicals in food production.

We believe that government should conduct serious research into where the incidences in food poisoning are occurring, eg at home or in catering establishments or in public institutions. Resources may then be targeted appropriately to optimal effect.

Doubts in Scientific Understanding Of and Statistical Information on Food Safety Issues

The precise origin and nature of *E.Coli* 0157 must rank closely in importance to the origin of new variant CJD (presumed to be caused by BSE infected meat and bone meal being used in animal feed) at the top of the food scare list, owing to their potential to kill. The international scientific community must make haste in defining the nature of these pathogens and answering the many open questions still hanging over the food industry on their food safety implications. Since these have knock on effects, for example on the handling of farmyard waste and its use on agricultural land, including use for horticulture, this is vitally important.

Retailers wish to have pathogens such as *campylobacter*, *salmonella* and *E.Coli* eradicated from the food chain, beginning with our flocks and herds where better management systems are necessary. We are not in favour of using irradiation, since we believe our customers do not want it.

British retailers would urge that decisions be taken on the basis of best international scientific understanding and not just UK experience. Given the free movement of products across borders, it must surely be in the interests of the EU generally to approach these matters at EU rather than national level. All real or anticipated UK food safety measures should be previewed by the EU to ensure the systems of control are common or enforced at the same rate. We are most uncomfortable with the views of MAFF's Food Advisory Committee alone being given the status of a legal instrument by MAFF and LACOTS. FAC's views should be firmed in legislation, where valid and put through the due processes to become law.

Research funding from government ought always to be available to identify any risk, the scope, the method of analysis or control and to put a monitoring system in place.

Level of Food Safety Risk at the Different Stages of the Food Chain—Retail

We recommend to you the Retail Industry Guide to Good Hygiene Practice which languishes currently with the Department of Health awaiting publication. The introduction of the concept of due diligence in the Food Safety Act in 1991 was a major step forward in UK law. The approach is built on risk assessment (HACCP) and adopting and running systems in food businesses to ensure food safety. Retailers believe it has led to an improvement in the general standards of hygiene practice in the British food industry.

Overzealous calls eg for the adoption of ambitious temperature regimes unattainable in practice in chilled food cabinets, in foods or for implementing all seven principles of HACCP, would undoubtedly hit the smaller retailer harder than his larger competitor. The Retail Industry Guide explains food safety law to the retailer as a one stop reference document. We urge that it be published without further delay.

Retailers are justly proud of the training programmes they run for their staff and believe that this is the right approach to maintaining a high standard of food hygiene in retail outlets, along with the mechanical and systems controls in place.

Ideally, the standards adopted further up the food chain ought to be sufficiently well held and policed so that a retailer's due diligence would be a mere formality. Unfortunately this is occasionally found not to be the case, which has obliged retailers to duplicate such work, eg posting veterinary experts in abattoirs, at a cost to the customer.

Other food safety risks, such as having salmonella and campylobacter endemic in the UK poultry industry, are reduced to zero risk in the food chain for composite foods and at home when handled and cooked properly. Our customers are opposed to the use of irradiation or chemical measures that reduce this food safety risk, such as bacterial washes applied at the end of the slaughter process. Hence they are generally not used in the EU, in contrast with the USA.

Government departments can help the food industry by trying to work proactively, signalling potential food safety issues and helping industry by validating test methods, in addition to the usual surveillance and enforcement work. Uniformity of operation by enforcement officers would be of great help to retail operations, since local discrepancies in priorities can create difficulties in trading.

British retailers believe the HACCP approach to food processes and systems in the food chain to be superior to the old prescriptive approach that laid down standards for particular points without raising the overall awareness of good practice at all times in the food chain. While a formalised HACCP approach works well in large companies which have technical support, it can be problematical for smaller companies where a generic risk assessment system would be helpful via sector guidelines. However, this also depends on environmental health officers being sufficiently well versed and trained in the systems to aid retailers, which is not always the case. BRC members are also working on a third party accreditation audit system, based on EN45000 series of standards which we hope will gain enforcement approval and should improve our checking systems.

With regard to chemical risk to food safety, retailers believe that the lowest limits consistent with good practice should apply, using phased reduction wherever necessary to bring about improvements and tighten specifications.

As for severe food allergy, which is known to cause anaphylaxis in a small minority of people, retailers recognise the problem and are trying hard to eliminate risk both by changing own brand product specification and working with suppliers on their systems and practices, as well as improving systems in store. As for the labelling of foods containing trace amounts of tree nuts, peanuts, sesame seed or shell fish, our members have subscribed to BRC policy whereby they will always declare the presence of such known severe food allergens, irrespective of the amount included in the actual food. This is regardless of the fact that the law allows components of compound ingredients representing less than 25 per cent of the end product not to be individually identified. We believe it is helpful to customers for us always to identify these ingredients and are encouraged that the government is taking this view forward into an international forum. A number of food retailers now have "free from" lists of foods which they make available to customers with food allergies.

In general, retailers believe that the enforcement resources deployed to enforce food safety measures are ample, while not always appropriate. For example, the use of veterinary experts to approve export documentation for meat products involves employing vets inappropriately, where people with expertise in food sciences and manufacturing processes would be apposite.

Food Safety Implications of Genetically Modified Organisms in the Food Chain

Any food safety implications ought to have been addressed prior to GM products being approved for marketing in the EU. We also believe that the approvals systems should be open to challenge at any time before or after such approvals are granted, that responses to challenges should be easily and publicly available and that post-release monitoring systems should be equally transparent.

As for the desirability and feasibility of labelling GM foods and ingredients, retailers are willing to change labels to signal the presence of derivatives containing modified DNA. There is a high probability that this will pertain to all soya shipments coming out of the USA from this month. While our cutomers have no strong views on the matter, we are minded to heed the consumer groups and others who have called for labelling as a means of informing the public. Ideally, there should be clear EU guidelines as to what labelling changes are expected and for which products. A two-year lead-in time for labelling changes would allow retailers to change their own brand labels during their normal commercial cycle, ie at no extra cost to their customers.

Food Standards Agency

British food retailers believe the proposed Food Standards Agency will be sorely tested in assuring all food safety systems in the food chain and regaining public confidence in those systems. Such a daunting task ought not to be watered down or side-tracked by secondary considerations such as nutrition, which is currently handled by the Department of Health, or responsiblity for research budgets.

The challenge of improving the UK's food poisoning incidence, by boosting UK food safety systems and public awareness of safe food handling practice, involving the central co-ordination and monitoring of the various enforcement activities, will be a task big enough to exercise the Agency on its own.

22 October 1997

Memorandum submitted by J Sainsbury plc (C72)

1. Group Profile

1.1 J Sainsbury plc is one of the world's leading retailers. Its UK food retail subsidiaries—Sainsbury's Supermarkets Ltd and Savacentre—operate 385 supermarkets and 13 hypermarkets, respectively. The Sainsbury Group also owns Shaw's which operates 115 supermarkets in the US.

1.2 Sainsbury's Supermarkets Ltd is the largest part of the Sainsbury Group. Last year it sold about nine billion food and non-food items. It works with over 2,000 suppliers who provide some 12,000 food lines and 9,000 non-food lines for sale to the nine million customers who shop in Sainsbury's supermarkets each week.

1.3 All the 117,000 staff working in Sainsbury's supermarkets and depots are trained to handle food products safely. Of the food products sold by Sainsbury's, over 3,000 are chilled, about 1,000 are frozen and the remainder are ambient. Only a limited number of the delicatessen, bakery and meat counter lines, involve direct handling by members of staff who receive a very high level of food safety and hygiene training.

2. Sainsbury's Product Safety Systems

2.1 *Working with Suppliers*

Sainsbury's has established its reputation for being a leader in setting the highest standards of product safety and quality by working in partnership with suppliers who share this commitment. We aim to provide customers with safe, high quality products. Together with our suppliers, we have developed a comprehensive Product Management System. The successful operation of this system is fundamental to ensuring the food we sell is safe, legal and of consistent quality. It covers every element of sourcing, production, distribution and retailing.

2.2 The Sainsbury's Product Management System is a structured system of assurance. A leaflet explaining its elements and how they provide confidence in product safety is attached (Sainsbury's Quality System) [*not printed*]. In summary, the system operates at two levels:

(i) partnership with suppliers—whereby quality and safety standards are managed using supplier vetting, supplier auditing and supplier process control techniques ie Hazard Analysis Critical Control Points (HACCP); and

(ii) management of products—whereby quality and safety standards are managed and verified through the use of product specification, product launch inspection, computerised customer complaints procedures and product surveillance techniques.

2.3 HACCP is fundamental to product safety and is a cornerstone of Sainsbury's Product Management System. Sainsbury's was one of the first food retailers to require suppliers to operate HACCP systems.

2.4 *In Store*

Once the products pass from the supplier to Sainsbury's distribution and retail operations, HACCP control techniques are similarly applied. Sainsbury's has played an active role in developing the Retail Industry Guide to Good Hygiene Practice. This guide will ensure that HACCP principles are extended to the whole of the retail food industry. The guide has recently been approved by DoH and will be published before Christmas.

2.5 *In the Home*

Sainsbury's seeks to ensure that its customers have sufficient advice and information so that once a food product has been purchased, customers can continue to handle it in a way that is not detrimental to the product's quality and safety nor to the customer's enjoyment of the product.

2.6 *On-Pack Product Information*

HACCP is extended to this area also—the cooking instructions on food products are devised using HACCP techniques with extra information being provided as appropriate for higher risk products eg instructions to ensure that beefburgers are fully cooked. Ingredients listings provide further information and specifically seek to address the needs of those customers wishing to avoid certain allergens eg peanuts, milk, and soya. Storage advice is provided eg "do not freeze". Products which intrinsically are felt to be a "high risk" to certain customers eg infants, pregnant mothers and the elderly, are clearly labelled advising extra care to be taken.

2.7 *MICROBAN*

Sainsbury's also sells a unique range of Microban protected food storage and kitchen equipment, for example, chopping boards. Microban represents a breakthrough in food safety because its anti-bacterial ingredient (Triclosan) actively prevents the growth of bacteria. It is particularly effective against E.coli, Salmonella and Listeria. It does not replace good hygienic practices but it provides extra protection for customers at home.

2.8 Sainsbury's is incorporating Microban in-store: store preparation surfaces, employee uniforms and food handling equipment—and many Sainsbury's suppliers are looking at ways of using Microban in their factories.

2.9 *Working with Enforcement Authorities*

Sainsbury's shares a common aim with enforcement authorities, to ensure the safety of the food consumed by the British public. The Company is in contact with Local Authorities throughout the UK and in particular with the London Borough of Southwark, which operates as the Home Authority.

2.10 In our experience the quality of enforcement authorities is not uniformly excellent. There is currently no form of external performance assessment and inconsistencies and variances in practice inevitably arise. Government has taken action to try to overcome these differences with guidelines and Codes of Practice, but local authorities can choose to ignore these.

2.11 One way to encourage best enforcement practice is for businesses to work in partnership with enforcement authorities. Recently an Environmental Health Officer from one of the more progressive authorities spent two weeks on attachment with the Company. This led to a greater understanding by both parties of business and enforcement authority needs. We would like to see greater cross-fertilisation of ideals in this way in future. In the same way that civil servants are encouraged to take up secondments to gain experience outside of Whitehall, we believe local authority officials would benefit from similar career development opportunities.

3. THE JAMES REPORT—PROPOSALS FOR A FOOD STANDARDS AGENCY

3.1 A copy of J Sainsbury plc's response to the James Report is attached [*not printed*]. Our key observations are outlined below.

3.2 Sainsbury's agrees with the analysis of the problems with the current system and are in broad agreement with the basic principles Professor James has proposed to underpin the new agency.

3.3 We believe the Health and Safety Commission/Executive (HSC/E) provides a useful model for the new regulatory agency. In our view, the HSC/E has a number of features which the new agency will need if it is to be successful in its aim of restoring consumer confidence in the food we eat. The HSC/E:

- advises ministers to ensure that policy is made with the full understanding of current practice;
- sits within a clearly established constitutional framework comprising ministerial responsibility and independent involvement through the Health and Safety Council;
- has executive authority to enforce legal obligations clearly set out in statute; and
- has a broad inspection role and is used to liaising with local authorities with overlapping responsibilities.

3.4 Sainsbury's disagrees with the remit for the FSA proposed by Professor James. The Government's decision to establish the new agency has been in response to recent food safety crises. For this reason, we believe, the agency's primary focus should be ensuring food safety. By giving the agency such a clarity of purpose, government will be able successfully to address public disquiet about food safety.

3.5 Nutrition, we believe, is an area of broad government policy. Whilst we believe that the new agency should have responsibility for a number of regulatory aspects, for example regarding nutritional claims and labelling, we do not think that advice on diet and health is necessarily related to food safety. Diet and nutrition are matters of considerable and legitimate controversy, where there are strongly held views which are often open to scientific challenge. It would be counter productive for the agency to be drawn into such controversy, since this could undermine, rather than re-inforce, public confidence in food safety. Such matters should therefore be the responsibility of the Department of Health. Similiarly, food standards relate to quality rather than safety and responsibility for these should either stay with MAFF or be given to the Department of Health.

3.6 The new agency should not only have responsibility for co-ordinating, monitoring and auditing the quality of local food law enforcement; but it should also be responsible for disseminating best enforcement practice to local authorities, and should have direct responsibility for enforcement at large manufacturing and processing premises.

4. FOOD SAFETY MATTERS TO BE ADDRESSED BY THE PROPOSED AGENCY

4.1 The British Retail Consortium (BRC) has commented in detail on the four matters on which evidence was sought. Sainsbury's fully supports these comments and would like to add additional comments on three matters in particular.

4.2 *"Risk" Communication*

The Government in conjunction with the new agency and the Central Office of Information should give consideration to improving the manner in which food safety issues are communicated to the media and the public.

4.3 The key to improving the current position, we believe, is to:

- foster a culture of transparency and openness between the agency and government departments;
- agree a pre-arranged crisis management communication plan with clear lines of responsibility; and
- become far more pro-active in the communication of food safety issues.

4.4 An important consideration when assessing how to communicate "risk" is that scientific assessment of "risk" frequently does not match consumer concern for the "risk". Thus there needs to be a much broader awareness and recognition of how "risk" is defined. It is no longer sufficient to rely purely on acadamic research. The perception of customers' needs and social values should be assessed and included.

4.5 *Food Safety Implications of Genetically Modified Organisms*

A paper outlining J Sainsbury plc's position with regard to GMOs is attached [*not printed*]. The main reasons why consumers have become concerned with GMOs in foods are:

(i) the possible restrictions to consumer choice arising from the lack of segregation of GM commodity crops from non-GM crops;

(ii) the lack of transparency and access to information about the new technology; and

(iii) safety concerns relating to the possible environmental effects of growing genetically modified commodity crops and produce.

4.6 *Segregation*

Sainsbury's would greatly prefer to be able to identify those products containing ingredients derived from GM commodity crops, such as the new varieties of soya and maize, and to label them. Prior to the 1996 harvest, Sainsbury's asked its suppliers to identify each of its products which may contain GM commodities. However, they were unable to do so because in those countries where GM commodities are currently grown, mainly the US, growers are not segregating GM crops from conventional crops. Sainsbury's met representatives of Monsanto, the US GM soya seed producer, during 1996 to discuss the possibility of segregation, but to no avail.

4.7 In view of this, Sainsbury's has spent the last 18 months working to identify certified GM-free sources of soya and soya-protein derivatives. As a result of this, the company will be able to continue to offer customers foods across our whole product range ie from bakery products to Textured Vegetable Protein ready meals, made from GM-free soya and GM-free soya-protein derivatives for the immediate future.

4.8 *Transparency of Information*

Sainsbury's has shown with the introduction of its own label GM-tomato paste in February 1996 that customers will choose to buy products that are clearly labelled as genetically modified and that with sufficient supporting information the concept of genetically modified foods is acceptable to many customers.

4.9 The EU is currently consulting on the best way to label GM products. We believe that the UK Government and the European Commission should not only be considering how genetically modified foods should be labelled but also how they, as the bodies approving the use of GMOs in foods should support the new labelling requirements with a consumer information programme to enable customers to understand the labels on the foods they are buying. In the absence of a UK Government or EU initiative, Sainsbury's and many other large food retailers will continue to answer customers' enquiries to the best of our ability, and to provide customer information about the use of GMOs in the foods, we sell. However, small and medium sized retailers will not be in a position to offer this service.

4.10 *Scientific Advisory Committees*

The system of scientific advisory committees offering independent and specialist advice to Ministers is core to the process of ensuring the safety of food eaten by British consumers and we recognise the value contribution that those who serve on these committees make.

4.11 Given that the FSA will not be established for some time, we believe that in the meantime, to ensure public confidence in approval procedures, the structure and understanding of what each Government scientific advisory committee does, be it in MAFF, DoH, DETR or any other Government Department, should be reviewed. We are concerned that these committees appear secretive. There is potential for their advice to be overly narrow and limited by their Terms of Reference. Gaps could occur in the advice offered to Ministers because aspects of certain issues fall to more than one advisory committee but as a result may be addressed by none.

5. CONCLUSION

5.1 Sainsbury's welcomes the importance which the Government accords to food safety. The safety of the food we serve customers is of paramount importance to Sainsbury's and has played a major role in the company's success over the last 128 years.

We welcome commitment of the Government to food safety.

- We support the creation of an agency clearly focused on food safety with powers of co-ordination, monitoring, audit and enforcement.
- The agency should participate in the process of formulating food safety legislation.
- It should be accountable to Parliament via the Secretary of State for Health.
- For the agency to succeed, it and its Commission must command the support of Government, business and the consumer.

3 December 1997

Examination of Witnesses

MR NIGEL MATTHEWS, Chairman, Food and Drink Committee, British Retail Consortium (BRC), and Group Secretary, J Sainsbury PLC, MS JANET NUNN, Director, Food and Drink, BRC, MR STEPHEN RIDGE, Chairman, Food Technical Advisory Committee, BRC, and Quality Assurance Executive, Somerfield PLC, MR DAVID SMITH, Chief Executive Officer, National Association of Master Bakers, British Retail Consortium, examined.

Chairman

343. Thank you very much indeed for coming. Mr Matthews, I think you are in charge today. May I invite you to introduce the members of your team?

(*Mr Matthews*) My name is Nigel Matthews, I am the Chairman of the British Retail Consortium's Food and Drink Committee. I have with me Janet Nunn, who is the Director of Food for the British Retail Consortium. Mr Stephen Ridge is the Chairman of our Food Technical Advisory Committee and Mr David Smith is with the Master Bakers.

344. May I ask you to go one stage further and tell us a little more about the Consortium itself and how exactly it represents the industry? Are all the major food retailers part of the Consortium? To what extent do you represent the small and medium-sized players in the market.

(*Mr Matthews*) BRC is a consortium of retailers. It has in its membership both direct company members and trade organisations. It covers food and general retailing and it has in its membership now all the main supermarkets. Through its trade organisations it covers the smaller retailers as well.

345. You would argue that you do represent the small corner shop.

(*Mr Matthews*) We very much represent the small corner shop, by no means just the large retailers.

346. May we start with something rather specific in the evidence which Sainsbury's provided in relation to Microban which has caught the Committee's eye and interested us? Are you able to answer questions on that or would you rather we asked for a written memorandum separately?

(*Mr Matthews*) I am quite happy to hear the question and try to answer it but I would prefer to deal with matters relating to the association rather than to my company because that is who I am representing today.

347. We may put some written questions about Microban then as it interests the Committee.

(*Mr Matthews*) Please do and any other questions which may interest you.

Mr George

348. We note from your memorandum that you believe the Government should conduct serious research into where instances of food poisoning are occurring. What do you have in mind in that?

(*Mr Matthews*) There is an issue about the extent to which the information about food poisoning is properly collated and this is something on which more focus is necessary. The particular issue is that food retailers, by their nature, have their own information. We do not have a mechanism of pulling together information generally on this issue. We are very much reliant on what the Government is doing. On the whole the Government is not focusing on these in the way that it might.

(*Mr Ridge*) It is very important that all food poisoning outbreaks are investigated, that we learn the lessons from them and from those lessons we actually implement change. The biggest difficulty we have is that clearly the vast majority of food poisoning cases are sporadic, they are not linked to an outbreak. If you look at an outbreak it is easy to investigate, it is easy to identify what the problem was. There is a large number of sporadic cases where it is very, very difficult to determine what is occurring

[**Mr George** *Cont*]
and why. As a group of large multiple retailers we certainly tried from 1990 to 1992 to do some work on sporadic cases and we found it was very, very difficult to do anything sensibly with it. The research which was done at Nottingham University really did not get very far I am afraid to say.

349. Would you not agree that the Public Health Laboratory Service has actually undertaken quite a lot of research in various aspects of food safety and food poisoning?

(*Mr Ridge*) Yes.

350. But you feel they have not gone far enough.

(*Mr Ridge*) The difficulty is understanding why the food poisoning is occurring. Clearly it is easy to identify where you have a large number of people falling ill at a banquet or having consumed a particular product; it is easy to see and you can trace it down and find out what has occurred. What we have is a large number of random cases with no obvious cause, no obvious links, no obvious understanding of where that is coming from and therefore how to put it right. That is the most difficult issue.

351. Is this something which you as an association or your members are funding yourselves? Are you undertaking any research yourselves or funding research to find out what is going on?

(*Mr Matthews*) No, we are not funding any research.

(*Mr Ridge*) We cannot actually. We did some funding of research in Nottingham but it depends upon links into doctors and doctors have confidentiality issues with patients. It has to be a public sector issue, I am afraid.

352. Do you feel that in pursuing research priorities, this is a UK Government responsibility or, given the fact that we are looking at import/export issues as well, that it perhaps might be more appropriately pursued on the EU level, EU funded research?

(*Mr Matthews*) It is not for us to comment on the funding of it particularly. As far as the UK is concerned, greater focus on this is something we should like to see.

353. A lot of what you are referring to is in fact research after the event.

(*Mr Matthews*) Research into why things have happened.

354. Clearly that needs to go on but at the same time would you not agree, given the fact that you and your members receive products from a variety of sources, that in fact a more international based research might be helpful?

(*Mr Matthews*) Yes, I am sure that would be helpful.

(*Mr Ridge*) It would be useful to say that as purveyors of own-label products in many cases we do have very extensive programmes of analysis and testing of those products.

355. How should this Government prioritise or determine its research priorities? Is it purely reactive to the occasion or can you advise the Government further in terms of research priorities?

(*Ms Nunn*) We are getting a little mixed up between the food poisoning and the food safety, the health of herds and flocks in general. We have to keep them separate. You started off asking about food poisoning and the PHLS themselves have currently no coherent or consistent approach to the investigation of outbreaks of food-borne infection and even less to sporadic cases of infection. Mr Ridge has explained the difficulties we encounter when we try to do it ourselves from our limited aspect. It is clearly something which the Government, with its resources can do, is trying to do but it needs some kind of improvement. There are questions such as: Why is the incidence of these outbreaks so much lower in Northern Ireland than anywhere else? Why is there an incidence of *E. coli* in Scottish herds?

Chairman

356. Do you have an answer to the Northern Ireland question?

(*Ms Nunn*) No, we do not but we are very interested. As retailers we do spend sums of money on doing our own checks with our own suppliers and working with suppliers.

Mr George

357. On the food safety side do you have research priorities?

(*Ms Nunn*) Yes, the companies do and they have not yet chosen to share that with me, I must say.

358. Can we have it shared this morning?

(*Mr Matthews*) The answer to that is that individual companies do carry out their own surveys but we do not have an industry survey as retailers. Individual companies, here we are talking about large retailers who are involved most directly with suppliers, work closely with suppliers in monitoring production. That information is dealt with on a company basis and is based on the trade between the producer and the retailer. It is not done on an industry basis.

359. That is your own monitoring. What about advising Government on their research priorities on food safety? Where should they start?

(*Mr Matthews*) The sort of issues which have been raised already this morning are issues on which we would support Government's further efforts in monitoring and establishing the health of flocks and herds and so on.

(*Mr Ridge*) In addition one of the areas of particular importance is the area of methodologies of analyses. *Listeria* did not exist before 1987: we could not actually find it because there were no methods to find it. In 1987 methods were developed and surprise, surprise, we actually find it. It is important that there is a development of research programmes to enhance methods of analyses specifically to help. Once the methodologies are there, it is for us to use them and see what we can do with them as best we can. To be able to fund that type of research requires the Government.

Chairman

360. I am sorry, it is probably my fault, but I am not understanding you clearly. Plough to plate is one of the many phrases used to describe the food chain and safety must be present at every level of that chain. You are saying the Government has responsibility for the issues in some part of that chain, in other words the taxpayer must pay for that work. You make a great deal of profit out of selling the food along that chain. Where does your responsibility end and the Government's begin?

(*Mr Matthews*) As retailers we have a responsibility under the Food Safety Act to sell safe food and to carry out all due diligence. What Mr Ridge was saying is that techniques of analysis are being developed all the time and improved. Once those techniques are available in the marketplace it is our responsibility to ensure that they are used in the monitoring of the food which we sell and is supplied to us by producers.

361. As market leaders, in respect of your big members, you have no more responsibility than the corner shop for actually enhancing the general research framework and policy background. Your responsibility stops at implementation.

(*Mr Matthews*) I would not go quite so far as that because we are concerned with selling safer food. We are concerned with understanding the techniques of analysis which improve the ability to assess that the food is indeed safe. The example of *Listeria* is a very good example. Retailers do not see that it is their responsibility to invest substantially in research of the new techniques. It is their task to use those techniques which are available, the most modern techniques which are available, to assure the safety of the food.

362. Let me give you another possibility. Is the responsibility of the food producers perhaps rather greater than the food manufacturers?

(*Mr Matthews*) The responsibility is shared through the food chain. Individually we do get involved in the development of new techniques to establish the origin of foodstuffs for example, authenticity.

(*Mr Ridge*) May I just say that it is your job to set the rules in which we work. It is our job to work within the rules.

363. I thought as responsible corporate citizens you liked to express views on these issues.

(*Mr Ridge*) We obviously like to express views on the rules in the first place. There is a number of things which we do together. We have been working very closely over the last year with a number of third party accreditation auditing companies and with a number of multiple retailers working together and with manufacturers to try to develop a method of approving a standard of auditing of food premises to a full standard. I have the seventh draft here. There is an eighth draft. We are hopeful that such a scheme will be registered in the near future. That will set down a framework for auditing of food premises, primarily manufacturing premises, because that is clearly the way we have been looking at it. This should ensure that the standard is there and people who are audited against that standard would have a very clear view of where they are in terms of technical controls and traceability systems.

Mr Todd

364. I am grateful to you for opening this one up. I am puzzled as to how you have drawn the line of responsibility for research. You said there was a particular problem obtaining data from doctors. This is not a problem which defeats our drug companies who are also private sector organisations who have to cooperate with the Health Service to produce a safe product. How has this lack of ingenuity defeated you so far?

(*Mr Matthews*) I am not quite sure I understand the analogy.

365. It is commonplace to work with GPs, albeit within an organised framework to test the safety of certain medical products, is it not? I do not see that it is particularly difficult for a private sector organisation to arrive at a relationship with the Health Service to analyse data relating to incidents of food poisoning and so on.

(*Mr Matthews*) I start from a slightly different perspective which is that the retailers' objective is to sell safe food to the customer.

366. It sounds as though that is not being met at the moment. From previous evidence that appeared not to be so.

(*Mr Matthews*) I am not sure I would accept that. Food in this country is safe. There are certain areas of difficulty and that is what this committee is looking into. I do not think one should get that out of perspective. On the question of what retailers are doing—and I am talking now about the larger retailers who work most directly with their suppliers, either in own-label or in fresh foods - our concern is to ensure that there is a clear understanding of the risks associated with a particular product, that those risks are addressed in the course of producing the product and in delivering it to us and, as far as we are concerned then, in selling it on to our customers and ensuring that the best possible hygiene and safety techniques are employed in the production of that foodstuff. That is the primary concern and that is what we spend a great deal of our time and effort in doing and achieving. We have devoted our trade activities, our collective activities, very much to sharing best practice and working with each other to develop that a greater understanding of those best practices and a greater application of those practices beyond what any individual company is doing with its suppliers. For a food retailer, the research issue is not the same sort of issue as it is in your example with a drug company seeking to put a new drug on the market which has to go through a great deal of preliminary approvals' process. That analogy just does not hold.

367. I was using it as a basis for comparison with cooperation with the NHS, which you appear to rule out and simply say that must be down to the Government.

(*Mr Ridge*) In fairness, what we do do is look at cases of food poisoning allegedly caused by our own-label products or branded products sold within our

[**Mr Todd** *Cont*]

store. Certainly when any such case comes into my company then I will happily investigate it and try to find out, if I can, what the cause of that food poisoning was, if I can prove it one way or another. Yes, we do investigate.

Mr Mitchell

368. You represent the big boys, therefore it is in your commercial interest to hype up food safety and perhaps to do more than you are doing on food safety in the hope that purchasers will be transferred to your white-coated probity and away from Freeman Street market in Grimsby.

(*Mr Matthews*) We are here representing large and small, although I work for a large supermarket company, as indeed does Mr Ridge; David Smith does not. There was a time when the issues of hygiene and food safety were very much company specific and were very much part of the competitive edge, not part of something which we discussed on a collaborative basis. The food scares of the late 1980s changed that and we do now work much more together in sharing information outside our own commercial interests in order to improve the understanding and standards generally.

369. The argument was just that you should be doing more in proportion to your benefit from a concern about food safety.

(*Mr Matthews*) We are increasing. I do not want to give you the impression at all that somehow we hold back on food safety. We make very strenuous efforts to ensure that the food we sell is safe. This is done not on a collaborative basis but on an individual commercial basis because that is the way we operate. We are independent businesses operating in a competitive arena. The basis of your comment is correct and several years ago would have been the case. We would have said "My shop is cleaner": not "My shop is cleaner than his shop", but "I am selling my service to the customer and building my relationship with the customer on the fact that if you come to my shop the food is wholesome and hygienic and the shop is hygienic". Let me take it away from the producer end, which is where the questions have been concentrating and look at it at the retail end. The customer sees us at the retail end and not back at the production end. One of the things we have done recently is that BRC has collaborated with LACOTS and the Department of Health to produce an industry guide to good hygiene practice which has now been approved by the Minister, I am glad to say.

Chairman

370. We want to talk about that later. We will come to that.

(*Mr Matthews*) I wanted to demonstrate that we are in a position to talk about certain things on a collaborative basis.

Ms Keeble

371. May I come back on the point that it is our job to make the rules and your job to work within them? It seems to me that implies an adversarial approach which is wholly inappropriate. Do you not think that the retailers hold an extremely large whip hand, given that even when I was a candidate, Sainsbury's very kindly explained to me all about their food safety research which was hugely impressive and covered areas of food safety which went way beyond the microbiological issues. Do you not think that there is an obligation, given that if food is bad it can kill people, to share best practice, not just between yourselves but also to be a bit more open with us in giving us advice and guidance as to where best we might look for the type of recommendations which are going to make a real improvement to the country's health and the safety of the food eaten?

(*Ms Nunn*) It is happening at the moment.

372. It is a general question but it is really to challenge over the point of what looks to me like you saying you are holding your cards to your chest and we have to ask the right questions.

(*Mr Matthews*) We seem to be getting into a bit of a dead end and thank you for that question. It is our concern to sell safe food to our customers. There is a commercial imperative to do that. I speak not just for a company in that but for the food retail trade. There is a legal basis for doing that in the Food Safety Act. In my judgement that has made a significant improvement in the way in which companies which already believed themselves to be in the forefront of food safety looked again at what they were doing, looked again at addressing the issues that were before them not just as commercial businesses but the trade and consumers generally. You are right to point out that it is not just a question of microbiological safety. One of the issues which individual companies have been taking forward has been the question of integrated crop management systems which look at reducing residues of various kinds and finding alternatives to pesticides and other artificial aids. There again we have managed to put our competitive instincts aside and work together on an accreditation system with the NFU amongst others.

(*Mr Ridge*) We have several schemes whereby we have actually cooperated together with farmers to try to put schemes together which will provide greater safety, greater confidence in the products we are selling. The integrated crop management one is one of the ones we have been working on for about four to five years. With the NFU we have been writing protocols defining what is the best practice in the development of typical UK crops. Those protocols have been written and we have now reached a stage where we have agreed that we can go forward with a verification system which NFU have agreed with. A contract has been awarded and farmers will be audited to confirm that they are complying with that integrated crop management system. We have similar systems in place with regard to farm assurance. We have looked at welfare issues, primarily associated with that where we have been able to agree general rules and try to provide a product which is traceable and proved to be farm assured.

Mr Mitchell

373. I assume from your evidence on the Food Advisory Committee that what you want is that measures on food safety should be taken on a Europeanwide basis because of the cross-border trade in food. We should therefore avoid gilt-edging everything in a way we tend to do in this country by having a more strict, less flexible enforcement of food safety provisions. You actually say you are uncomfortable with MAFF's Food Advisory Committee alone—alone in Europe presumably—being given the status of a legal instrument. Is that because you think they will become excessively stringent?

(*Ms Nunn*) Thirty per cent of our foods are imported. Clearly it is no good us trying to work on this with our heads totally inwardly focused. We need to work at a new level. It also means we have the best expertise advisable on lots of these issues which can surely be to the benefit of our customers. Since ten million customers a week go into the stores of the largest retailers, there is a lot of contact and feedback and we are in a very personal way answerable to the customers. I ought perhaps to remind you that some 40 per cent of foods sold in the UK nowadays is own-label. As well as being retail purveyors of foods we are manufacturers by proxy, hence our very detailed involvement in the way foods are grown and manufactured.

374. That can come from inside or outside the European Union, can it not?

(*Ms Nunn*) Indeed.

375. Are you saying here that you want us to move *pari passu* with Europe: no faster, no slower?

(*Mr Matthews*) No, we are not. What we are saying is that the developments in the UK have to be seen in a EU context. That is the first thing. The second thing is that the actual text of this comment is perhaps not as clear as it in hindsight might be which is presumably why you are asking the question. One of the concerns we have is that there is at the moment a process of developing legislation. What we are not clear about is whether the Food Standards Agency would in essence be issuing new legal regulations and requirements which may themselves give rise in the context of this paragraph to EU problems because of single market requirements and so on. I would not want to read more into it than that.

376. You say that the FAC's views should be firmed in legislation, where valid.

(*Mr Matthews*) For which there is no process.

377. That means British legislation, not European.

(*Mr Matthews*) Yes.

(*Ms Nunn*) It would probably be European because anything we want to do in the UK has to be referred back to the Commission and they then put it out to the other member states for approval.

378. It should be done on a Europeanwide basis.

(*Ms Nunn*) Yes, it should. If something needs doing it should get approval and be done on a EU basis, at EU level.

(*Mr Ridge*) We could be in a situation where it would be illegal to produce the product in the United Kingdom but perfectly legal to produce it anywhere else in the EU and import it into the UK. We do not believe that is an appropriate position and certainly if regulations are made with regard to any particular food safety issue, those are obviously up for consultation discussion whereas FAC views are not necessarily open for the same discussion.

379. That is what I was hoping you would say. Thank you.

(*Mr Matthews*) Our concern is that whatever happens in the UK has to take account of a EU context.

Chairman

380. I read your evidence rather differently from Mr Mitchell. I thought you were really attacking the Food Advisory Committee itself. This little phrase, "FAC's views ... where valid" seems to imply that you think they are often not valid. Is that the case?

(*Mr Matthews*) No.

(*Ms Nunn*) No.

381. What is the point of the phrase "where valid" in the evidence? I am not being confrontational, I am just wondering what is the validity or otherwise of the phrase.

(*Ms Nunn*) I was thinking of an incidence when I wrote that which had caused our sector particular concerns. It was the hearing of something at EU level where the civil servants came back and asked us to investigate, which we promptly did, retailers and manufacturers together. The FAC had meanwhile set totally arbitrary limits which have been proved since to need thorough investigation on the basis of proper scientific finding. That is really rather uncomfortable for an industry to have to work with. That kind of advice given out as a firm recommendation tends virtually to have this status of law for those enforcement officers wanting to go in on the ground and start doing their own surveillance work investigations.

382. "Where reasonable" is probably a better phrase.

(*Mr Matthews*) Yes. The point really is that there is a legal framework for making new law which involves substantial consultation and discussion.

Mrs Organ

383. You recommended the Retail Industry Guide to Good Hygiene Practice but apparently we cannot get hold of it. Could you tell us a little bit about this document? When was it written? What exactly is its remit? Who put it together? What is its status now? You have said at the end that you have urged it be published without further delay. Have you had discussions with the Department of Health and is the guide to be a voluntary code of practice or would you hope to see it being mandatory?

(*Mr Matthews*) The guide is a guide prepared under the Food Safety (General Food Hygiene) Regulations 1995 which provide for the creation of industry guides. We have had a group which has been developing that and I am going to ask Mr Smith to talk about that because he has been more directly involved in it.

[**Mrs Organ** *Cont*]

(*Mr Smith*) The industry guide has been put together and a lot of time has been spent by industry representatives in meetings through LACOTS and via the BRC and meeting the Government. The industry guides have to be approved by Government, they have to be signed off by the relevant Minister. The industry guide for retail has been signed off and the industry guide for the baking industry has been signed off. Those are now in the process of being printed. Once they are printed they will be available for people to purchase, people being yourselves and the industry at whom they are aimed. In the case of the baking industry, the suppliers have undertaken to make sure that every baker, every baking company, is going to get a copy of the guide. Then an environmental health officer, when he goes into any premises, will be able to ask where the guide is, they have it, do they understand it, let us take one specific point and see whether it is working. We believe that these guides for all industries—and we are speaking here about retail and with my speciality, bakery—are going to be a big improvement in the interface between the local authorities who are responsible and the producers who are actually producing and selling the food.

384. The bakery guide has been signed off and is published.

(*Mr Smith*) Is now being printed.

385. Which ones are we waiting for?

(*Mr Smith*) The retail guide is in the same position.

(*Ms Nunn*) It will be published in January. The Department of Health is actually administering that.

(*Mr Matthews*) They were signed off last month by the Minister of Health.

Chairman

386. Your evidence came to us about six weeks ago so where you said you urge they should be published without further delay, that urging has had its effect.

(*Ms Nunn*) Yes.

387. It is no longer a problem.

(*Mr Matthews*) Ministerial approval has been given and publishing is now under way.

Mrs Organ

388. You have talked about due diligence which has led to an improvement in the general standards of hygiene practice in the British food industry and your guide is working towards that as well. Could you tell me why you believe there has not been a decrease in the number of food poisoning cases in recent years? You have talked about it being sporadic but that the numbers have not decreased, yet if we are all getting a lot better at preparing food and we are all being a lot more hygienic, why is there a shortfall?

(*Mr Ridge*) Food poisoning statistics are precise and they say exactly how many cases have been notified. We have always known that some are notified and some are not notified. The difficulty we have is that we have no idea whether the total number of cases is going up, down or anything. All we know is what is happening with regard to the reported cases. It is impossible really to say the true position in the United Kingdom.

389. The reported cases are rising.

(*Mr Ridge*) Yes.

390. One could assume therefore that that pattern is probably similar with the unreported cases.

(*Mr Ridge*) You cannot necessarily assume that. There are possibilities that people are more prepared to talk to the doctor, to complain when they have not been well. As we expect to get better service out of retail outlets, so the likelihood of complaint increases. It is possible that you are actually getting more referrals and therefore more notifications, not necessarily that total numbers are going up.

Chairman

391. Do individual members keep statistics about the levels of complaints against your individual companies?

(*Mr Ridge*) Yes.

(*Mr Matthews*) Yes.

392. Do they show any trends?

(*Mr Matthews*) Speaking for my own company, we are not seeing an increase in food poisoning. If there is any question of a complaint which involves sickness, that is investigated most thoroughly. We are not seeing a trend which suggests that as far as my company is concerned it is connected with more cases of food poisoning.

Mr Mitchell

393. The more you pay the better you get. Is there any correlation between price and problems?

(*Mr Ridge*) It is probably a case of the more you pay the more you expect it to be right and therefore the more you complain.

394. The more you complain if it is not right.

(*Mr Ridge*) Yes.

Mr George

395. May I turn to genetically-modified organisms? We note and appreciate the point that you are willing to cooperate in any changes with regard to labelling and recognise that in order to satisfy consumer concerns this may be necessary. In general, are your members in favour of the use of GMOs in order to create food?

(*Ms Nunn*) Yes, we see that with the latest technology there will be benefits coming down in the next generation especially of genetically-modified crops for customers and that will be nutritional benefits and also price benefits. The first generation have environmental benefits and you can use fewer pesticides and that is rather more difficult for them to perceive because no price advantage is being passed down. Indeed as the Consumers' Association mentioned, the Americans are not segregating, it is not a consumer concern over there, they do not see the need for it and there are no food safety issues as in the EU. GM has just been put together with the conventional crops and we are not able to perceive any price benefits.

[**Mr George** *Cont*]

396. You do not see any difficulties from that angle but what about persuading your customers? Have you undertaken any surveys of customer views on this?

(*Mr Ridge*) There is a fundamental issue and the fundamental issue is that there is a need for approval which is robust. We have already had the Consumers' Association criticise the approval process. There is a need for the approval process to be reviewed. It needs to take account of the arguments which have been made by groups such as the CA or by Greenpeace. Those arguments need to be addressed. Until those arguments are addressed, there will be an issue as to whether the Government is the font of all knowledge with regard to this. There is a need for those sorts of things to be tackled first and from that we will reach the stage where there is going to be trust in what the Government is doing, which clearly there is in America. You might argue there may not be in the UK. From there we are actually in a position where we can start to use the products.

397. Leaving aside consumer views on this matter and whether you have assessed what the views are, you are saying that it is a question of the procedures of the Advisory Committee on Novel Foods and Processes and perhaps the European Commission's Scientific Committee on Food. What changes in procedures in relation to genetically-modified foodstuffs, in relation to the assessment of ensuring that all aspects of the implications of GMOs are rigorously understood, what aspects do you think still need to be satisfied in order to provide that ground base of confidence?

(*Mr Matthews*) There are two issues: one is safety and one is public confidence. As I understand it, the present procedures address the scientific evidence on safety. They do not address the issue of public confidence and they are not designed to. If I may digress slightly, my company in conjunction with another company, Safeway and Zeneca, introduced onto this market a couple of years ago a genetically-modified tomato paste, which received a considerable amount of publicity at the time and was very clearly labelled that it was made with tomatoes which had gone through a genetic modification. That product has proved to be very acceptable to the consumers and it went through an approvals process as regards food safety. The problems arise and there the consumer has a very clear choice. They can buy this product which is clearly labelled or they can buy another product which does not contain that type of tomato. The real issue for us as retailers over public confidence comes out in relation to ingredients and commodity products like soya which has been discussed this morning. We are not in a position to secondguess the approvals procedures. If the governments, both at EU level and in the States and in the UK, say this product is safe, we do not have a scientific basis to say that it is not safe.

398. Once that has been satisfied, you recognise that you have a role in educating and promoting.

(*Mr Matthews*) We have a role in ensuring that customers are aware of what they are buying and that they can have a choice, where that is at all possible. Our issue at the moment is that we are not able with certainty, or looking forward into next season are not going to be able with certainty, to say whether or not a particular product includes an ingredient which has been genetically modified. The issue there is not safety, it is information and the corollary of that, which is confidence.

Ms Keeble

399. You set out views on the remit for the proposed Food Standards Agency. Is that the view of all your members or is it primarily the bigger retailers?

(*Ms Nunn*) It is the view of all the members. I have mentioned in the submission, the view that when talking specifically about whether nutrition should be handled as well as food safety, the Co-op alone felt both issues should be in. I must say that members have reinforced that view just recently. They do believe the focus should remain on food safety. If in the longer term, once the food safety angle has been tackled appropriately, we see the incidence of food poisoning lowered or whatever yardstick you want to take, then it may be valid for the remit to be widened.

400. Looking through the proposals, and also the Sainsbury's proposals since they were submitted to be considered at the same time, what you are putting outside the Food Standards Agency is that it will not deal with nutrition, which is widely discussed, presumably it will not deal with health advice, it will not deal with enforcement—in Sainsbury's submission—it will not have responsibility for enforcement and it will not deal with research. That leads me to say: how is it going to be able to do anything?

(*Ms Nunn*) If I may correct you, we did want it to have an overseeing advisory role and we believe it needs to be objective, needs to be divorced from the main hands-on activities to be truly powerful. The same with the enforcement. We want it to have that overseeing role, monitoring role and have that kind of advisory role.

Ms Keeble: I read that. I saw that it has a coordinating and monitoring role but that is different from enforcement. If you just oversee and monitor and produce reports you cannot actually always get things done. What I want to know is, if the Food Standards Agency is set up the way you say, is it going to be a bit of a toothless watchdog? How are you going to make sure that it can actually ensure that we do see improvements in food safety?

Chairman

401. That is a long question but I want to add to it and make it the last question of your session. That is an incentive to you to give us a comprehensive answer so we can then finish. Enforcement is what I want to ask you about as well. I am concerned that in your memorandum you tell us how you are having to duplicate investigations at abattoirs with your own veterinary experts. It is my understanding that the Meat Hygiene Service is making great strides to level up the level of inspection across abattoirs. Are you still pursuing that separate investigation procedure at abattoirs? How are you finding the levels of enforcement among individual local

[Chairman *Cont*]

authorities? Is it variable in the areas? If it is, should the Food Standards Agency not be taking note of that and doing something about it?

(*Mr Ridge*) Yes, we certainly employ our own staff for the visiting and auditing of all our own-label suppliers. We would have staff who were appropriately qualified to go into slaughterhouses, poultry slaughterhouses.

402. You go beyond that in your evidence. You say that you found that the standards up the food chain are not adequate and it is not the case and you had to duplicate the work.

(*Mr Ridge*) It is quite reasonable for us to say that if we want to sell a particular product under our brand name we can set a specification for it which might be different from what the law says currently and is better and that is what we do.

Ms Keeble

403. I am sorry to interrupt you but may I just say that it is quite likely that your standards could well end up being higher than the Government's and higher than the Food Standards Agency's which leads to me wonder what the point is of having a Food Standards Agency because Sainsbury's, for example, have said they have very little food poisoning which is traceable back to their food, which I can completely believe. We could end up with a Food Standards Agency where the standards are just too low.

(*Mr Matthews*) It comes back to this rather boring thing called the due diligence requirement in the Food Safety Act. It is an ongoing driver for food safety. It is always possible to do more and we are constantly striving to improve the quality and the safety of the foods we sell. That has to be taken at different levels and Mr Ridge's company, my company and other companies are involved very much in the own-label business. A lot of what has happened in discussion here this morning has concentrated very much on that and not perhaps as much as we might concentrate on the actual shop side of our activities. You mentioned specifically abattoirs. All our large companies have contracts with meat packing plants and abattoirs and they will send in their own inspectors to see that commercial specifications which are laid down are being followed up. Those commercial specifications will go beyond just food safety issues into quality and packaging and all sorts of issues like that. The question of local authorities enforcing food safety in the store is another issue which you have raised. We do not think that is something that the Food Standards Agency will do itself. I am not aware that there is a suggestion that it should but that is going to remain a local authority responsibility. The key issue for retailers will be how that responsibility is exercised to ensure proper coordination of standards across the country. Our companies have been involved with local authorities in developing the LACOTS concept of the home authority. That is working for some companies better than it does for others and that depends very much on the local authority where your head office happens to be and experience is mixed. It is going to be very important for multiple retailers to ensure that there is an adequate mechanism for coordination, for interpretation of new laws. That is very much what we look to the Food Standards Agency to do in conjunction with LACOTS. We would see the Agency having a clear role in doing that across the country.

Chairman

404. There is variability of experience at local authority level.

(*Mr Matthews*) Absolutely.

(*Ms Nunn*) Yes.

405. On that simple answer we may push on. Thank you very much indeed for your time and trouble.

(*Ms Nunn*) May I leave two documents with you: one is some research funded by retailers and manufacturers into public perception of genetically modified food. It does flag up that we need to work all together in this domain. The other one is on labelling.

406. We will find that very useful. Thank you very much.

(*Mr Matthews*) If you would like advance copies of the retail guide I will ensure that one is provided.

Chairman: A copy would be welcome. Thank you very much indeed.

Supplementary Memorandum submitted by the British Retail Consortium (C74)

Thank you for the opportunity of submitting oral evidence to support our written submission. I was somewhat suprised at the extent of the Committee's interest in discussing research. On the one hand there is research we would like government agencies to conduct into the cause of food poisoning (especially sporadic outbreaks). On the other hand there is the surveillance and research that retailers conduct and share with suppliers or between ourselves on the non-competitive issue of food safety. As a result, we did not have time to address one issue, the licensing of red meat retailers, which we are concerned about.

If you permit, I would like to make the following points in an attempt to clarify our position:

1. Licensing of Red Meat Retailers

Time did not permit us to express our views on Professor Pennington's recommendations, post last year's *E.Coli* 0157 outbreak in Scotland. He had recommended at 7.32d in this report that licensing be introduced for butchers until such time as full HACCP procedures were in place. A risk based approach founded on HACCP has been a requirement of all retailers, including butchers since the 1995 Regulations. However, we understood the Government is now preparing to introduce licensing of retailers selling red meat regardless of whether they already operate HACCP and regardless of whether they sell prepacked or open meat, or indeed handle raw meat and cooked meats.

While we fully endorse the need for retailers handling raw and cooked meats especially to operate full risk assessment in their businesses we can think of no single advantage that the introduction of licences would bring to customers over and above the current registration system which, if operated properly, already gives enforcement officers extensive powers.

The registration system obliges retailers to register their businesses 28 days before opening, which permits an enforcement officer to arrange to visit the premises at any time before or on the day of opening, as often happens. He may issue improvement notices where minor flaws are found, or indeed close down the business before it starts to trade with a prohibition notice, if major flaws posing a serious risk to food safety are identified. The onus of proof lies on the enforcement officer in this instance to justify his actions and compensation is payable to the operator if the enforcement officer's judgement is found to be impaired.

Licensing, on the other hand, would shift the onus of proof to the retailer, such that a timid enforcement officer could close down a business, leaving it to the retailer to prove his innocence and fitness to trade. Moreover, individual Authorities would be able to impose conditions on the issue of licences which could result in substantial and arbitrary requirements differing from one local Authority to another. It is not clear whether compensation would be payable if the enforcement officer is shown to have made an error of judgement, which is of concern to any business whatever the size. However, for small businesses, the cost in terms of time and expertise of mounting a defence and taking it through the courts while his operations are suspended and good name is tarnished could prove too much to sustain.

If, as we suspect, the major benefit of introducing licensing is to generate income for local enforcement authorities, to help fund improvements in their food safety work, it is ill-placed. Local Authorities already derive substantial income from retail businesses and a re-ordering of resource to food safety as a national priority may be necessary for some.

2. Retail Industry Guide

I have pleasure in enclosing a copy of the final draft of the Retail Guide [*not printed*] in which you and your colleagues showed interest. As mentioned, it has been signed off by Ministers and is due for publication in January.

Retailers have gone to great lengths to try and address risk based food safety matters. We set great store by The Retail Industry Guide which we believe will ensure compliance with best hygiene standards. It goes a substantial way towards ensuring Professor Pennington's concerns are understood and will be further enhanced by the Retail Butchery Supplement whose publication is expected in the Summer of 1998.

15 December 1997

Supplementary Memorandum submitted by J Sainsbury plc (C78)

Thank you for your letter of 9 December. Herewith the answers to the three questions posed:

1. Whether Microban Required Approval Before it was Marketed and, if so, When and How it was Approved; and

2. What Levels of Migration of the Active Ingredient of Microban, Triclosan, on to Food, Take Place;

The active ingredient of Microban additive is Triclosan which has been approved for use in cosmetics for many years. It is a common ingredient and can be found in every day products such as toothpastes, mouthwashes and shampoos.

Products incorporated with Microban additive do not require approval prior to being marketed. However, they do fall within the scope of two specific Regulations both of which control the migration of the constituents of the product into foodstuffs. These Regulations are;

The Materials and Articles in Contact with Food Regulations 1987, as amended (SI 1987/1523)

The Plastic Materials and Articles in Contact with Food Regulations 1992, as amended (SI 1992/3145)

All of our products incorporating Microban additive have been tested by accredited laboratories. All results have been below the current maximum levels of migration specified in each of the above Regulations.

3. HOW THE EXPIRY OF THE USEFUL LIFE OF MICROBAN PRODUCTS IS INDICATED TO CUSTOMERS

Durability testing has been undertaken to stimulate foreseeable life use of products incorporating Microban additive. Again this testing has been undertaken by accredited laboratories. Results indicate that the anti-bacterial activity remains for the useful life of the product and in some cases beyond.

I have enclosed by way of example some samples of Microban products. We are more than willing to supply further information on Microban if the Committee so requires.

8 January 1998

Memorandum submitted by Marks & Spencer plc (C29)

The success of Marks & Spencer's food business over 50 years has been based on a foundation of safety together with close technical control and monitoring of quality against clearly laid down standards. From this experience, we know that to retain the confidence of our customers, we must work in partnership with the entire food chain, from the farm to the shelves of our stores. Long-term relationships with suppliers have been an essential part of our approach.

Safe food production requires that the risks associated with the food supply are properly managed. To recognise and understand these risks, a detailed knowledge of the science is essential and we believe food production should always be carried out under appropriate technical control. The lack of regulation in this area needs to be questioned. Without proper control, even the best factory facilities will not guarantee food safety.

No one benefits from food safety "scares"—producers and retailers alike are all affected when our customers lose confidence in the systems that ensure the food they eat is safe. We support moves towards "better regulation" but it is important we continue to develop a culture that encourages dialogue between business and the enforcement agencies to build confidence and to help raise standards. A simple return to more prescriptive food hygiene laws will not create safer food. Above all, we need to see a greater willingness by enforcement authorities to use their powers to stop unsafe food practices on a consistent basis across the country.

Marks & Spencer welcomes this opportunity to contribute to the debate on how best to improve food safety systems in this country and we see the creation of an independent Foods Standards Agency as an important step in this process. We have tried to illustrate key points about safe food production drawing on both our own experience and that of our suppliers. A copy of our earlier response to the proposals by Professor James is appended [*not printed*].

SUMMARY OF COMMENTS

1. The success of Marks and Spencer's food business for over 50 years has been based on a foundation of safety together with close technical control and monitoring of quality against clearly laid down standards. Long-term relationships with suppliers have been an essential part of our approach.

2. A detailed knowledge of sensitive raw materials is essential to assure safety and to allow traceability systems to be established.

3. We can no longer expect the customer alone to manage the risks associated with handling raw foods. The aim must be to exclude pathogenic organisms from the food chain. Food irradiation is not an acceptable answer.

4. Changes to systems of sewage and waste disposal must not create new threats to food safety.

5. Clean foods cannot be made in dirty factories—hygienic standards must be built into the design.

6. The top management in every food business must show an absolute commitment to a culture that puts food hygiene and safety first. Proper hygiene training is essential for all food handlers.

7. The risks to food safety must be clearly identified and controlled throughout the food chain using systems such as HACCP. Technically competent staff are essential for this task.

8. The safety of perishable foods cannot be assured by temperature controls alone.

9. Food temperature legislation must be achieveable throughout the food chain including the customer at home.

10. Food safety must be the priority for a Food Standards Agency. Important messages about nutrition need to be delivered but well-being cannot be imposed on the consumer.

11. Food labelling is important to assist customer selection but it is not a substitute for information and education.

12. We all depend on a robust system for regulatory assessment of the safety of novel foods.

1. Raw Materials

A detailed knowledge of sensitive raw materials is essential to assure safety and to allow traceability systems to be established.

Specifications

1.1 We have always recognised the importance of specifying and controlling raw materials to achieve consistent standards of safety and eating quality in the final product. Primary production methods, control and selection at harvest time and care during subsequent storage and distribution are key factors. From our experience, we know this demands an in-depth knowledge, detailed specifications and in many cases, the direct involvement of our technical team. Individual ingredients pose different levels of potential risk to food safety and must be dealt with accordingly.

Back to Source

1.2 Examples from the early years of Marks & Spencer illustrate these points. As we developed sales of fresh produce, major improvements were achieved by going "back to source"—either in this country or overseas. Establishing direct communication between the buyer and the producer ensured vital messages concerning safety and quality were not lost or distorted. For our customers, the result was an improved supply of better quality fresh produce and this early success encouraged us to take this approach to procurement of both products and raw materials.

1.3 Cakes and biscuits were also major sellers in our early food business but we found dried fruit ingredients gave problems of contamination with animal droppings and other foreign bodies due to the primitive methods used in their production. Marks & Spencer played a key role in pioneering improvements to agricultural practices to reduce these risks and to set benchmark standards that still apply today. From this secure base, we have built a valuable business and at the same time cemented relationships with the primary producers which have lasted more than 30 years.

1.4 The value of a secure supply base is not measured simply in terms of commercial availability and the price paid for ingredients. The continuity of contact also provides a certainty of knowledge which is of great practical benefit to help us respond when a "crisis" erupts. The recent concerns over mycotoxin contamination of pistachio nuts and dried fruits underline this point.

1.5 Today's customers demand a range of tastes and products reflecting an increased knowledge of food and appetites stimulated by foreign travel. Our quest for authentic ingredients inevitably leads us to investigate new raw materials and sources of supply. These visits are essential since the standards of agricultural and food production that have become established as norms in Europe cannot be taken for granted elsewhere in the world. Increased knowledge and changes within our own environment also mean we must remain alert to new threats to safety standards. For example, recent problems of Cryptosporidium in the public water supply have caused us to re-examine more generally the approach taken at our suppliers to water for use both as food ingredient and a processing aid.

Traceability

1.6 An in-depth knowledge of raw materials is the first stage in establishing a traceability which extends through processing to the final product. Ultimately, this provides the means to identify any batches that may fall below standard and which need to be isolated or even withdrawn from the market. It may not be necessary to maintain full traceability for every ingredient—it is a matter of risk assessment to determine the level of detail required to assure safety and quality. However, every system of traceability must be audited to ensure reliability. The commercial consequences of a failure to maintain traceability are well-demonstrated by the recent action in the USA after an outbreak of food poisoning due to *E.coli* 0157 where a company[1] recalled its entire stock produced over a two and a half month period—some 12 thousand tons of frozen hamburgers. The potential damage to a firm's reputation can, of course, be even more far-reaching.

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[1] Hudson Foods Inc. Nebraska.

2. PATHOGEN REDUCTION

We can no longer expect the customer alone to manage the risks associated with handling raw foods. The aim must be to exlude pathogenic organisms from the Food Chain.

Food irradiation is not an acceptable answer.

Changes to systems of sewage and waste disposal must not create new threats to food safety.

Meat and Poultry

2.1 The absence of pathogenic organisms is an absolute requirement in all pre-prepared cooked foods. Re-heating by the customer is only intended to make food palatable—it must not be used to make food safe. However in the case of raw meat and poultry, there is no doubt that a reduction in the incidence of pathogens would have a major effect on cutting the risk of food poisoning originating from cross-contamination in the home.

2.2 During recent years, we have worked with our suppliers to introduce control measures that have significantly reduced the incidence of salmonella in our raw poultry with the aim of its eventual eradication. The mechanisms to control Campylobacter have not yet been fully elucidated and more knowledge of this organism is needed. We are convinced that the elimination of pathogens from the Food Chain must be a priority. However, we firmly reject calls to use irradiation for this purpose. It provides no incentive to solve the problem at source and our customers clearly do not want to eat irradiated foods.

2.3 We believe the impact of animal health and welfare on food safety is of major importance. Together with a number of our suppliers, we have founded a Chair[2] at Cambridge to explore these relationships—a better understanding at the fundamental level will help to find practical solutions.

2.4 Consumer Research[3] continues to show the profound changes to eating habits taking place in this country. The traditional "meat and 2 veg" family meal occasion is being replaced by more individual arrangements and increasingly, more food is being consumed outside of the home. Understanding of food preparation techniques and the control of risks are no longer handed down through the family and do not feature well enough in our children's education. The almost inevitable consequence of this trend is that we can no longer expect the customer alone to manage the risks associated with handling raw foods—we must take greater responsibility to deal with these pathogens at source.

Sewage and Waste Disposal

2.5 We would draw attention to an emerging threat to food safety arising from changes to the methods used to dispose of sewage waste or "biosolids". There is concern that moves towards more disposal on the land may increase the potential to contaminate salad and vegetable crops with human bacterial and viral pathogens from sewage. Although this issue has been subject to review[4], a wider consideration should include similar disposal of industrial and agricultural waste in relation to the risks from pathogenic organisms and other forms of contamination. This is particularly important at a time when there is pressure to reduce the use of chlorine as a bactericide in water used to cleanse these crops as they are processed for packing.

2.6 There is no simple resolution to these apparently conflicting environmental and food safety concerns and more research is urgently needed. However, it is a good example of how modern food production must be viewed in a wider context and how the consequences of any proposed regulatory action need to be fully explored. We would expect the Food Standards Agency to take a leading role to co-ordinate these efforts.

3. FOOD MANUFACTURING

Clean foods cannot be made in dirty factories—hygienic standards must be built into the design.

The top management in every food business must show an absolute commitment to a culture that puts food hygiene and safety first.

Proper hygiene training is essential for all food handlers.

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[2] The Marks & Spencer Professorship of Farm Animal Health, Food Science and Food Safety at the Department of Clinical Veterinary Medicine, University of Cambridge

[3] Taste 2000 conducted by NOP for Geest Prepared Foods September 1997

[4] House of Commons Environment, Transport & Regional Affairs Committee 1997

Clean Food from Clean Factories

3.1 The Marks & Spencer "obsession" with clean factories and hygiene controls became well-known in the UK food manufacturing industry during the 1950's and '60's. Poor structural conditions and infestation with rodents or insects were then common problems. Many of the standards of today were evolved during this period and from the principles that were established, a new generation of food factories has emerged specifically designed to provide the high-care facilities needed for volume production of perishable foods.

3.2 Our customers have demanded better-tasting, less-processed fresh foods equivalent to the best that home-cooking can produce. Modern factories are designed to accommodate these needs whilst at the same time achieving the highest standards of Safe Food Production. Safety is built-in by design—for example in the physical layout of production lines to prevent cross-contamination of raw and cooked products, and by making the walls, floors and equipment easy to clean.

Management and Training

3.3 But none of this comes cheaply. Capital investments of £20 million do, however, prompt top management to give the most serious attention to the technical control and professional management which are essential if these factories are to operate properly. Management control is a critical element to ensure food safety standards are maintained during manufacture but a well-trained workforce is an equally fundamental requirement—there are still many tasks that are best done by hand, especially where the highest quality standards are sought. The investment in capital must be supported by an investment in people at all levels in a food business.

3.4 It is perfectly possible to produce safe food on a much smaller scale where applying the principles of Safe Food Production can result in different solutions to the challenge of maintaining safety standards. The critical element remains the attitude of the senior management and a visible commitment to producing safe, wholesome foods. Small factories and catering establishments are particularly dependent on their staff who need to be imbued with an attitude of mind that puts hygiene training into practice every time.

3.5 The cost of safety should not reflect in the price the customer pays for food. The use of alternative, lower-cost ingredients need not result in foods which are any less wholesome. Conversely, the very best ingredients are no guarantee of safety for foods badly handled in unhygienic conditions.

4. Risk Assessment and HACCP

The risks of food safety must be clearly identified and controlled throughout the food chain using systems such as HACCP.

Technically competent staff are essential for this task.

Technical Control

4.1 There is no doubt that risk assessment techniques such as HACCP (Hazard Analysis Critical Control Point) have a major part to play throughout food production. However, HACCP is only a tool and not a universal solution. Increasingly, food hygiene legislation mandates the use of these risk assessment controls but there is little acknowledgement of the technical expertise needed to establish and to operate such systems. It demands an appreciation of all the scientific disciplines which relate to food safety. Enforcement authorities are required to check that these systems are in use and are effective but again little attention has been given to training them for this task.

4.2 In our comments on the James report[5], we suggested that food businesses should be required to employ suitably qualified staff to identify and manage safety controls such as HACCP. The level of qualification would, of course, reflect the kind of risks which the food business has to manage but even the smallest shop has a responsibility to handle foods safely and this demands an understanding of the risks to be controlled.

4.3 Urgent attention must be given to attracting more young people to a career in food science and technology. Whilst we are making our own contribution[6], wider support is needed to make schools better informed of the opportunities. In higher education, there are currently too many courses chasing too few students which does not help to raise standards.

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[5] Interim Proposal for a Food Standards Agency by Prof Philip James April 1997

[6] *Marks & Spencer 'Delivering Food Technology in the Curriculum'*

5. RETAIL AND DISTRIBUTION

The safety of perishable foods cannot be assured by temperature controls alone.

Food temperature legislation must be achievable throughout the food chain and by the customer at home.

Food Temperature Controls

5.1 The development of our perishable food business in the 1960's required fundamental changes to systems of distribution and the creation of an integrated "cold-chain" which guaranteed controlled product temperatures from our suppliers to all our stores. Today such systems are commonplace in the UK but the reliability of temperature management should never be taken for granted. The question of statutory controls has been settled in the UK but there are continuing discussions in Europe to set harmonised temperature standards for perishable foods.

5.2 For most perishable foods, temperature control has a direct impact on freshness and therefore the commercial keeping-life of a product. However, food safety cannot be assured by temperature alone. The importance of control over raw material selection and hygenic production methods cannot be overstated in this context.

5.3 Temperature control must be maintained throughout the chain including the time after purchase and during domestic storage. A product consumed at the end of the "use-by" date may have a different temperature history if it was bought shortly after delivery and stored at home compared with a product displayed for a longer time in the shop. The shelf-life given to our foods is determined on a scientific basis and takes full account of these factors.

5.4 The current UK regulations set a maximum temperature of 8°C for perishable foods that might present a risk to health if stored at higher temperatures. This represents a sensible balance; it is adequate to maintain safety for the range of products currently available in this country whilst recognising that temperatures below this level are difficult to maintain in the home.

6. THE CUSTOMERS

Food safety must be the priority for a Food Standards Agency.

Important messages about nutrition need to be delivered but well-being cannot be imposed on the consumer.

Food labelling is important to assist customer selection but it is not a substitute for information and education.

We all depend on a robust system for regulatory assessment of the safety of novel foods.

Nutrition and Food Safety

6.1 Since the publication of the James report, there has been a lively debate about the place of nutrition in any Food Standards Agency. In our opinion, food safety is the immediate priority for the Agency. We recognise important messages about nutrition need to be delivered, for example about the benefits of a reduced fat intake. However, it must also be accepted that nutritional well-being cannot be imposed on the consumer or regulated in an overt fashion. We believe it is our job to provide customers with a range of properly-labelled, wholesome foods from which they will make their own informed choice—customers will listen and respond to common-sense arguments. Education in general dietary health cannot be achieved by food labelling or restrictions on product composition. Some of the media response to the recent COMA[7] report shows how easily health advice can be rejected as interference by the "Nanny" state. The Food Standards Agency must not be allowed to jeopardise its credibility in this way.

Labelling

6.2 We label *St Michael* Foods to provide customers with the information they require in the most complete and easy to understand fashion. Labelling is not there simply to meet legal obligations. We recognise some customers wish to avoid particular foods for religious, ethical or medical reasons, notably food allergens. We try to make food labelling sufficiently comprehensive to accommodate as many of these needs as possible. For example, we have introduced additional labelling to make it easier for customers to identify products containing nuts of any kind. Some cases cannot be addressed by labelling alone and for these customers, we provide information in other forms.

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[7] Committee on Medical Aspects of Food Policy report on Cancer and the Diet concerning the risk of cancer from excessive consumption of red meat—to be published autumn 1977

Safety of Novel Foods

6.3 We are not always able to make our own assessment of the safety of novel foods or processes. In some cases, such as genetically modified foods, we rely on the regulatory safety procedures that already exist, both in this country and in Europe, to provide a robust system based on the best available scientific knowledge. Concerns have been expressed that these procedures are not sufficiently independent but we remain confident about the advice already given. We believe a lack of transparency in the workings of the advisory committees may be the real issue and this should be addressed with urgency.

6.4 Labelling is a sensible way to assist the customer to identify products which contain genetically modified ingredients. However, it is quite unacceptable as the only means of informing the customer about this new technology since this requires an education process on a much larger scale. This has not yet happened in this country or in Europe and in the resulting vacuum more polarised views dominate the debate. We accept that Government is not responsible for promoting commercial activity but we suggest there is a wider public duty to support a framework in which educational activity can be given a credibility which cannot be achieved by those with direct commercial interest. We would expect the Food Standards Agency to be highly active in this way.

10 October 1997

Memorandum submitted by Safeway Stores plc (C28)

SUMMARY

Food safety is Safeway's first priority from Board Room to customer and central to our trading philosophy. In parallel with operational growth through increases in stores, product ranges and supplier base we have translated policy into practice and over three decades have single-mindedly driven improvements in food standards and food safety.

Achievements include:

- — a world class chill chain;
- — food hygiene and safety training for all store staff;
- — improved animal welfare and crop management standards through partnerships with farmers and growers;
- — traceability from farm to store; and
- — own brand ranges resulting in the growth of dedicated own brand suppliers.

Consistent with our philosophy, Safeway has invested heavily in highly skilled technical personnel who are responsible for the end to end control of our food supply chain.

Despite these achievements, food safety issues have dominated the media both in the late 1980s and over the last two years. The ensuing public debate has culminated in proposals to redefine Government infrastructure for developing and implementing food safety policy, but, as yet, has come no closer to understanding the root causes of the food safety issues that are being identified.

As a large organisation that has food safety at the core of its culture, Safeway has been concerned over the events of the last two years and is keen to participate in any discussions that will identify and rectify both real and perceived issues over food safety.

We draw the attention of the Agriculture Committee to the scale of the UK food supply chain and the diversity of the businesses that can operate legitimately within it, without any formal requirement for technical support or systems.

We also recognise that food handling and storage of high risk products in the home is too important an issue to be left to instructions on labels and that education in food safety and hygiene must begin and continue at school as part of the curriculum. The retailer has increasingly become the deliverer of consumer education in food labelling and food safety, a role which properly belongs to the Food Standards Agency.

Consumer lifestyle changes are accelerating, food safety in the future will be influenced by new retailing developments already happening, including the increasing move to take-away in supermarkets, the growth of barbecuing and the introduction of home delivery services.

Government research, linking with retailers to build on the knowledge they have of consumer trends and shopping patterns, is the key to understanding the food safety issues of the future. We have made several recommendations on government research in the recommendations and conclusions section of this response.

INTRODUCTION

Safeway is the third largest quality food multiple in the UK, with a 7.8 per cent market share. It has 425 stores each stocking on average 17,000 items, annual sales in excess of £7bn and employs 71,000 staff. Safeway has its head office in Hayes, Middlesex, six Regional Distribution Centres, and the widest geographical spread in terms of stores of any of the major UK food multiples.

This paper provides evidence to the Agriculture Committee on Food Safety. Our evidence is split into five sections:

- Section A—Background to Safeway and its Food Safety philosophy;
- Section B—Consumer Trends and their Impact of Food Safety;
- Section C—Food Safety: challenges for the Food Industry;
- Section D—Conclusions and recommendations.

The scope of our debate on food safety covers traditional food safety issues (microbiological, chemical and physical contamination) and longer term exposure to dietary factors impacting on public health.

SECTION A—FOOD SAFETY AT SAFEWAY

1. DEFINING FOOD SAFETY POLICY

Food Safety Policy is defined at Board level. The Safeway Board-led Product Policy committee meets regularly to define policy on both the direct issues of food safety in relation to contamination hazards and on the broader related issues of agricultural production systems. Proposed policies are ratified by the Safeway Board and drive the development (in the case of own brand), merchandising and stocking policy of both own-brand and branded food products.

2. WORKING END TO END ACROSS THE FOOD SUPPLY CHAIN

Safeway spends some £5bn a year with 1,800 suppliers. 85 per cent of the products sold by Safeway are UK grown or manufactured. Not all are large food manufacturing businesses: however, for all our suppliers, hygiene requirements are the same, and equally rigorous.

Safeway makes considerable efforts to assist, train and educate suppliers about food safety requirements. Very often a high level of technical support is required to be given to those smaller companies who show product development creativity and promise.

S&A Foods is an example of a supplier with extremely high food safety standards that has established a successful trading relationship with Safeway on ethnic ready meals. Based in Derby, S&A supplied us back in 1984 with, what was at the time, niche products including bhaji and pakora Indian snack products. In 1997, our business with S&A has risen to one million meals per week. Over these years, our technical staff have worked closely with S&A to help them develop their HACCP approach to food safety, and playing an active part when a new factory, employing 600 people, was commissioned in August 1995.

3. RAW MATERIAL AND PRODUCT STANDARDS

3.1 *Animal Welfare*

Safeway's "shopping list" includes 70 million chickens a year, 100,000 cattle, 900,000 pigs and 400,000 sheep. Safeway first recognised the need for a defined Farm Assurance scheme in 1992, when it introduced its first Quality Assurance Scheme for Beef.

In 1993, Safeway launched "Heritage" beef, a scheme that ensured Safeway beef was raised to specific farm assurance standards. By 1995 the company was working towards farm assurance standards for all species and in April 1996, all meat raised for Safeway was in compliance with these standards.

Safeway's farm assurance policy is compatible with major industry schemes and covers:

- animal welfare and housing;
- feed composition and storage;
- medicine use and recording;
- transport and livestock handling; and
- inspection and monitoring.

It is part of our terms of supply that only approved abattoirs are used. Safeway-appointed teams of inspectors visit these abattoirs on a regular, unannounced basis, to assure themselves that hygiene standards are being met. Meat for Safeway is packed in two dedicated meat packing plants, where hygiene is supervised by Safeway's own on-site hygiene inspectors. Furthermore to ensure impartiality Safeway invest in additional independent auditing of the Scheme, end to end through ADAS.

3.2 *Traceability*

A vital component in our Farm Assurance Scheme is traceability. We have implemented systems so that Safeway fresh meat is traceable from the retail pack back to a batch of supplying farms. All of these farms are required to operate to the Safeway Farm Assured Standard.

Our policy on traceability has been extended. We are currently implementing programmes so that processed meat and poultry products will comply with the standards for traceability and farm assurance in the same way as for fresh meats. Progress is steady but hampered by the lack of agreed baseline farm assurance standards in overseas countries.

3.3 *Integrated Crop Management*

Over the last five years, Safeway along with other retailers, has been working closely with the National Farmers' Union on the development of Integrated Crop Management Protocols. The purpose of the protocols is to encourage growers to identify and utilise techniques which minimise the use of agrochemicals and to ensure those that are used are applied in a responsible way. Safeway has recently chaired the group leading to the formalisation of the Assured Produce Scheme.

The Assured Produce Scheme covers British grown field vegetables, salads, top fruit and soft fruit for the fresh and processed markets. To ensure credibility with consumers an independent verification of growers' compliance with the NFU-Retailer Partnership's integrated crop management protocols has been established. To be accepted into the scheme, participants must complete an annual self-assessment questionnaire, backed up by periodic independent inspections. The questionnaire includes a number of challenging questions relating both to food safety and environmental protection.

The aims and objectives of the Assured Produce Scheme are supported by EUREP, the Euro-Retailer Produce Working Group, a group of 26 European retailers, brought together by Safeway, whose aim is to raise the standards of agricultural production and encourage global integrated crop managmeent. Achieving a "level playing field" is not only important for the development of international food safety but also to ensure our home industry remains competitive.

We believe schemes such as this, along with meat farm assurance, ensures food safety has a practical meaning for producers and for the first time links them into the food chain.

3.4 *Genetically Modified Foods*

Genetically modified foods are in the early stages of development. Providing they are approved as safe by the appropriate regulatory authorities and there are benefits to the consumer, Safeway supports the sale of foods and foods containing ingredients resulting from the application of genetic modification.

Safeway together with J Sainsbury launched the first genetically modified whole food in February 1996, in the form of tomato purée and produced by Zeneca. Full and clear labelling of this product together with additional point of sale information demonstrates our continued commitment to providing informed consumer choice in this and other areas.

Such products will continue to be clearly labelled in the future beginning with products containing genetically modified soya and maize from January 1998.

4. FOOD DISTRIBUTION AND THE CHILL CHAIN

4.1 *Developing a World Class integrated chill chain*

The complexity and size of our logistics chill chain can be summed up by these statistics: 4,000 fresh food lines, equating to 4 million cases of product per week into 6 depots, making 600 deliveries to all our stores every day of the year. This is the "chill chain", the critical handling of fresh products from the time they leave the manufacturer, to the time they reach the shelves in store.

Like all retailing developments, the improvements in the chill chain over recent years have been driven by the consumer. Today's shopper wants to be able to buy goods that are at their peak of freshness in store, yet long-lasting at home. Developing and fine-tuning the chill chain to meet this demand is a continual challenge for both the food manufacturer and the retailer particularly as high risk products become more lightly treated with preservation agents.

4.2 *At the Distribution Centre*

Temperature control is key. Suppliers' own transport to Safeway's Distribution Centres has to meet vital "docking slots". On arrival, product is inspected by Safeway's Food Hygiene and Safety team, who have 12 personnel involved in temperature monitoring. Covering each of our six Distribution Centres, these staff spend their working day checking and recording the temperature of inward deliveries, alerting the company to, and rejecting, any potential problems.

Another recent development for our Logistics operation has been to improve the rate of flow through the supply chain of fresh foods. Formerly, product arrived at the Distribution Centre between 6 am and 4 pm, was unloaded into chilled areas, and then, several hours later, was taken from the chilled areas and placed onto pallets for each store.

Now deliveries arrive between 2 pm and 11 pm, and are placed on pallets for each store in chilled areas, directly on arrival. This removes one "step" of the operation, minimises stock holding, provides the optimum "in home" life on fresh lines and means that in some areas, products really have been harvested and packed that same day. We are also investing in a new generation of supply chain systems to cope with the diverse and flexible channels of supply from the manufacturer to the store.

4.3 *Deliveries to Store*

Safeway lorries are fitted with a unique satellite tracking system which allows drivers to communicate with the depot and vice versa, using an on-board computer terminal. Lorries can be re-routed to avoid traffic congestion, ensuring that perishable goods arrive in optimum condition in store. When drivers are 15–20 minutes from store a signal can be sent direct to a store manager's personal pager. The store staff are then ready to receive the delivery, cutting delays and improving the condition in which product arrives on shelf.

On arrival at the rear of the store, the chill chain is rigorously maintained. The temperature-controlled lorry off-loads products into its own designated chilled holding areas for cooked meat, fresh meat, produce and dairy, each with their own temperature regimes.

4.4 *The Chill Chain in Store*

In-store chillers and refrigerator cabinets are rigorously monitored. Computer-controlled settings mean that store staff are immediately alerted to any problem. Settings are also constantly monitored by a central Safeway computer based at Gateshead. Not only will this alert store staff out of hours to any problem, but it will monitor temperature movements and detect chillers or freezers that are presenting anomalies.

5. PRODUCT SUPPLY CHAIN CONTROLS

The safety of our customers and personnel is Safeway's top priority and central to our trading philosophy. We have invested heavily in scientific and technical experts to establish and maintain end to end control over our standards across our entire product supply base, our distribution centres and our stores. This ensures that all the products we sell not only aspire to the most stringent safety and quality requirements but importantly deliver the customers' expectations of safe, wholesome food.

5.1 *Supplier approval and monitoring*

Before any company is accepted as a Safeway supplier, an in-depth approval audit is carried out by Safeway technologists. This examines all the supplier's systems including hygiene, processing, and overall HACCP, together with the supplier's ability to provide product to meet our specification in the volumes required. Suppliers are regularly formally reinspected at least once a year as well as informally when our technologists are on site dealing with product development. Food manufacturing standards demanded by the inspection process are far in excess of the minimum, with Safeway having driven HACCP across its entire supply base since 1992. Diagrams in the Annex of this document show the flow of new product development at Safeway and our approach of monitoring the food supply chain.

5.2 *The Food Hygiene and Safety Team*

Leading in-store food hygiene and safety, is a team of 13, all ex-local authority Environmental Health Officers, supported by five technical assistants. This team fulfils a number of key roles, including:

- *Local Authority Liaison*—The team is the key liaison point with local authority EHOs on complaints and issues relating to food safety. Their own Hygiene and Safety background means that they can ensure that food safety standards are likely to meet the needs of local EHOs, and that any issues that arise are resolved quickly and effectively.

— *In-store hygiene and Safety Training*—In store hygiene, although it is seldom mentioned by consumers, is the subliminal factor that drives the choice of supermarket. Most consumers, when asked, will say that they choose their supermarket by location, the range of products, the friendliness of staff and standard of store hygiene. Hygiene cleanliness is an essential that is taken for granted by today's consumer.

Because of this, the Safeway Hygiene and Safety team has a critical training function. Every one of Safeway's store staff, from the most junior to the most senior, receive food hygiene and safety training. It begins as part of their induction, continues with specific training as they move through areas of the store that have specific requirements e.g. bakery and deli departments, and is further supported by the Hygiene and Safety team providing advice on new legislation or developments in best practice.

Food safety has been reinforced in our internal "Make A Difference" (MAD) campaign and is a slogan adopted by company staff. The core theme is that every member of staff "makes a difference". MAD, when applied to food hygiene, means that every member of the store staff has a proactive role to play in health and safety and in making stores a safer place to shop.

5.3 *Hygiene and Safety Audits for Stores*

The Food Hygiene and Safety team also carry out regular inspections and audits of our stores, looking at documentation and related practices in 30 key areas around the store within hygiene and safety. The auditing team will sit down with the store management, determine priority needs and develop improvement plans.

SECTION B—CONSUMER TRENDS AND THEIR IMPACT ON FOOD SAFETY

1. New Trends in Food

Food is part of our lifestyle and like our lifestyle, it is constantly evolving. The growth in the number of working women, the increasing sophistication of a well-travelled population, combined with the growing loss of cooking skills among younger home-makers, has led to a huge demand for ready prepared ingredients and for meals that can be "taken away" from stores.

Consumers are demanding foods with fewer and fewer preservatives. Couple this with their requirement for fresher foods with longer shelf lives to last between supermarket visits, considerable challenge is placed on product design and handling requirements to ensure food safety through product life.

Eating out currently represents 30 per cent of UK food expenditure; in the USA it represents 45 per cent. Food shopping in the future will be the retailers' response to a catering-driven trend. Our shopping baskets are more likely to contain "Meal Solutions", a part or fully-prepared dish, instead of cuts of meat and vegetables. Rather than displaying food in produce, dairy, meat or deli blocks, it is likely we will see foods segmented and ranged as "Eat n' Go", "Dinner Tonight", "Dinner Later", "Feed the Family Tonight", or "Breakfast Tomorrow".

We are already seeing proof of this in UK supermarkets, with take-away ready prepared meals, pizzas and hot chicken rotisserie, prepared salads and sandwiches all on offer.

Another trend that has developed rapidly in recent years is the summer barbecue. For five months of the year up to 60 per cent of meat and poultry is cooked on the BBQ. It is crucial that consumers appreciate the requirements for thorough cooking and the need to prevent crossover from raw to cooked foods whilst cooking.

2. New Store Formats

Convenience and ease will grow as a key shopping factor. One of the fastest growing parts of the Safeway business is petrol stations. From a handful of sites in 1990 to 140+ today, Safeway's joint venture with BP aims to bring added convenience, and fresh foods at supermarket prices. With 24 hour opening customers increasingly expect to be able to purchase fresh foods anytime they shop.

3. Remote Shopping

Our new "Collect and Go" home shopping scheme is currently restricted to bulky commodity items but there is no doubt that over time and with the rapid development and acceptance of Information Technology the demand for home shopping will grow. This extension of the "Chill Chain" will also present challenges for managing food safety requirements.

SECTION C—FOOD SAFETY: CHALLENGES FOR THE FOOD INDUSTRY

1. Official Statistics on Food Borne Illness

Despite all our efforts, food borne contamination whether microbiological, chemical or physical, clearly occurs. The reported incidence of food poisoning continues to increase year on year with the Communicable Diseases Report citing over 80,000–90,000 cases of food poisoning in 1996 of which approximately 40,000 are attributed to Salmonella and 45,000 to Campylobacter. Our Food Hygiene team suggests that these figures could be increased 10-fold to cover unreported incidences.

FDF statistics covering 1994, showed that seven per cent of the UK population were affected by food borne illness, accounting for the loss of some 23 million working days at a cost of approximately £1 billion. These do not include the costs of treatment.

We can debate whether those statistics are due to greater awareness and/or better reporting and collation but an inevitable consequence is that the publicity continues to affect consumer confidence in the food industry. The fact that they exist at all, should lead us to continually challenge the food chain from farm to fork, our understanding of its operation and the research that is funded both publicly and privately to further that understanding. In this section of our evidence we look at each of these areas and document our views/concerns.

2. Factors Impacting on Food Safety

2.1 *Skills and training*

Risk analysis and quality assurance systems in the food industry are becoming increasingly sophisticated and are generally developed by food scientists and technologists who fully understand the safety issues, although not always the nature of the operational environment.

The setting up and maintenance of such systems in the operational environment also requires skilled technical personnel with the routine operation undertaken by lower skilled, often poorly motivated staff where turnover can be extremely high.

Operation of safety control procedures in the food supply chain, therefore, requires constant training, self inspection systems, a level of policing and, importantly, a company culture that gives priority to consumer safety.

Regardless of the point of the food supply chain being addressed, these points translate into ensuring that there is sufficient competent resource available to introduce and maintain safety controls at the operational level where personnel turnover is high.

Whilst Safeway has a relatively large and mixed size supply of 1,800 suppliers world wide, we ensure that all are technically competent and appropriately resourced to meet the above criteria. The same cannot always be said of the 25,000 other food businesses that are legally permitted to operate in the UK without licence or formal inspection. Many of these produce, process or prepare the highest risk category of products.

2.2 *High risk fresh and chilled foods*

The last decade has seen a large increase in the demand for and availability of, fresher and more lightly preserved foods. As a consequence the only means of controlling food pathogens to zero risk levels is through sound and sometimes sophisticated production hygiene control, equally good hygiene handling practices down stream in distribution and retail/catering, and an effective and fully integrated chill chain. Both require technical understanding and control that is not always present in small food businesses.

2.3 *Chill chain integrity*

The chill chain is fundamental to controlling food pathogens at a level that does not compromise consumer safety. The safe life of high risk foods is based on end to end integrity of the chill chain.

Assuming that the chill chain operates perfectly on the product supply side, consumers must also understand their responsibility in maintaining the chill chain both between the store and the home and inside the home during storage. Whilst on pack instructions and other point of sale customer information undoubtedly helps, it is obvious that the level of consumer understanding surrounding the handling and cooking of high risk products is poor. Although Safeway considers education to be an important aspect of customer service this is no substitute for teaching the basic principles of food hygiene as part of the school curriculum.

2.4 *Hazard Analysis Critical Control Point (HACCP)*

In the 1970s Pilsbury Foods and NASA jointly developed the HACCP system to ensure that food manufactured for astronauts was safety guaranteed. The system requires:

- full multidisciplinary review of all aspects of the product, raw ingredients, processes from production to consumption and how these impact on safety, microbiological, chemical and physical contaminants;
- setting of controls and tolerances at the earliest point in the process;
- measurement of control points to ensure that they are within set tolerances; and
- documentation.

So successful has the HACCP concept of food safety control been that in:

- 1992 Safeway began its introduction to all own brand suppliers and inclusion as part of own brand product specifications;
- 1995 the EC Horizontal Hygiene Directive made it a legal requirement although oddly without a requirement for the system to be documented;
- 1996 HACCP became a legal requirement in the US following deaths due to *E.Coli* 0157 from contaminated burgers;
- 1997 Pennington recommended that HACCP should be a legal requirement for butchers' shops also as a result of Lanarkshire *E.Coli* outbreaks; and
- 1997 additional government resource was committed to EHOs to implement HACCP in high risk operations.

Despite world wide recognition of the HACCP system as an effective means of maximising product safety, it is our view that the majority of small food businesses will not have full systems in place and for many of those that claim they do, the system will be superficial, reflecting their limited technical competence.

At the retail level most independent outlets may not be familiar with the concept and we would therefore support the recommendations of the Pennington report not just for butchers but for all food premises selling food for eating directly or indirectly.

2.5. *Research*

Safeway believes that appropriate research into food safety is critical for the future. Despite the importance of the food poisoning statistics, there is no formal government research programme to identify and address the specific factors that cause these episodes of food poisoning.

Whilst Safeway funds research on food safety, we concur with Government that this is the key area for the bulk of MAFF's research spend. However, we do not think that the distribution of funds given to food safety by MAFF reflects the priorities of either present or emerging issues.

The current MAFF research strategy to the year 2000 continues to propose research into single scientific issues such as dioxins, radiological protection and heavy metals (amongst others) which we consider to have been well covered over the past 10–15 years and represent low relative risk compared to emerging issues such as *E.Coli* 0157. We would encourage Government to recognise the law of diminishing returns with its research programme as well as being more flexible with its budget. We would also suggest a more co-ordinated, holistic, approach to its research, recognising the links and interactions that occur and impact on food safety in a complex food chain.

Finally in this area and consistent with our submission on the Food Standards Agency, Safeway strongly supports research on food nutrition as a means of fully understanding the relationships between food, diet and disease. Whilst we concede that this area does not fall within the current limited definition of food safety we accept growing evidence that food components, inappropriately balanced within the overall diet, can lead to the onset of life threatening diseases such as certain cancers and coronary heart disease. We particularly support research to understand nutrition at the molecular level which will clarify some of the existing conclusions from epidemiological studies.

We do not accept that long term health in relation to food consumption, is any less important than the short term food safety and believe that the unravelling of the complex multiple factors involved in the above mentioned diseases to be of high priority. The protective/deleterious actions of nutrients on the long term health of populations/individuals are no less important in terms of research than a similar understanding of the natural mutagens that may exist in food as a consequence of normal cooking or processing.

In addition, we consider the following broad areas of research to be of higher priority in the current circumstances:

- Consumer Trends—How will these impact?
  With the lifestyle changes covered above, and the predicted growth in "take-away" eating, Safeway would like to see a formal MAFF/Food Standards Agency research programme directly linked to topical issues, such as barbecuing, and ready-prepared foods.
- Animal Production Systems—an holistic approach
  There has been much speculation by pressure groups on the link between intensive farming and food safety issues. We consider this area to be a fruitful one for Government research.

SECTION D—CONCLUSIONS AND RECOMMENDATIONS

Safeway believes that retailers have a significant role to play in food safety and have demonstrated over the last three decades their commitment to constantly improving food safety across the food chain.

Safeway itself is committed to ensuring that food safety is a key driver in the development of its retailing operation.

Safeway Makes the Following Recommendations:

1. Before being able to operate, all food businesses require an appropriate level of technical skill in order to implement, maintain and evolve their HACCP systems. Licensing should not just be restricted to butchers' operations (Pennington) but should cover all organisations that potentially contribute risk to consumer safety. In our opinion this includes elements of primary production, including those on-farm operations, that increase the risk of microbiological, or chemical contamination further down the food chain.

2. MAFF should invest in research into emerging areas which are linked to changing lifestyle, and how this relates to food purchasing and use e.g. the growth in take away eating and barbecuing.

3. Allocation of research funding should be flexible as it will be key to the Government's ability to anticipate, understand and address future food safety needs in a more focused and timely manner.

4. Government research should not be restricted to single scientific areas but should take a more "holistic" approach—for example, looking at the use of probiotics/antibiotics for animal welfare and growth enhancement and whether intensive farming practices do or could constitute a food safety problem.

5. The proposed Food Standards Agency should work closely with retailers to build on their knowledge and in particular to understand the developments in retailing that will unfold over the next five years. These will impact on the need for education and consumer information material, including the requirement to communicate and educate the findings from nutrition research in relation to long term health and prevention of disease.

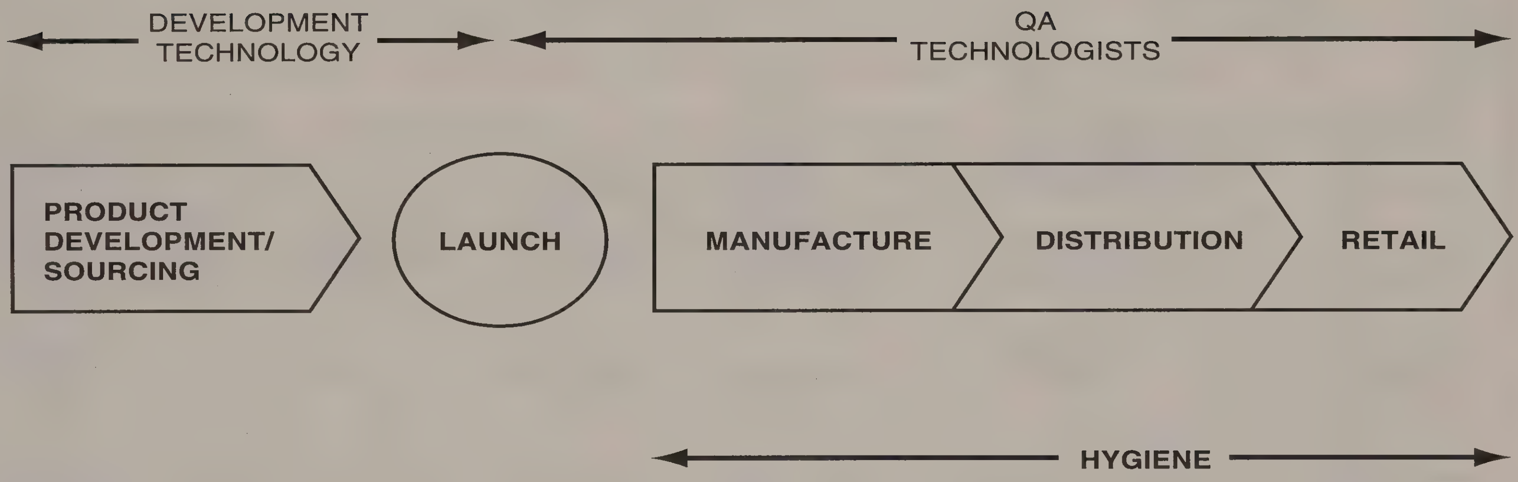
6. Retailers have demonstrated their closeness to the customer and their ability to provide trusted information. However, we believe there is a complementary role to be played by Government, particularly when it comes to complex scientific issues, such as genetic modification, where Government has access to all available information from specialist committees.

7. Government should encourage the adoption of international baseline standards for agricultural products to ensure imported raw materials meet the high standards met by British producers.

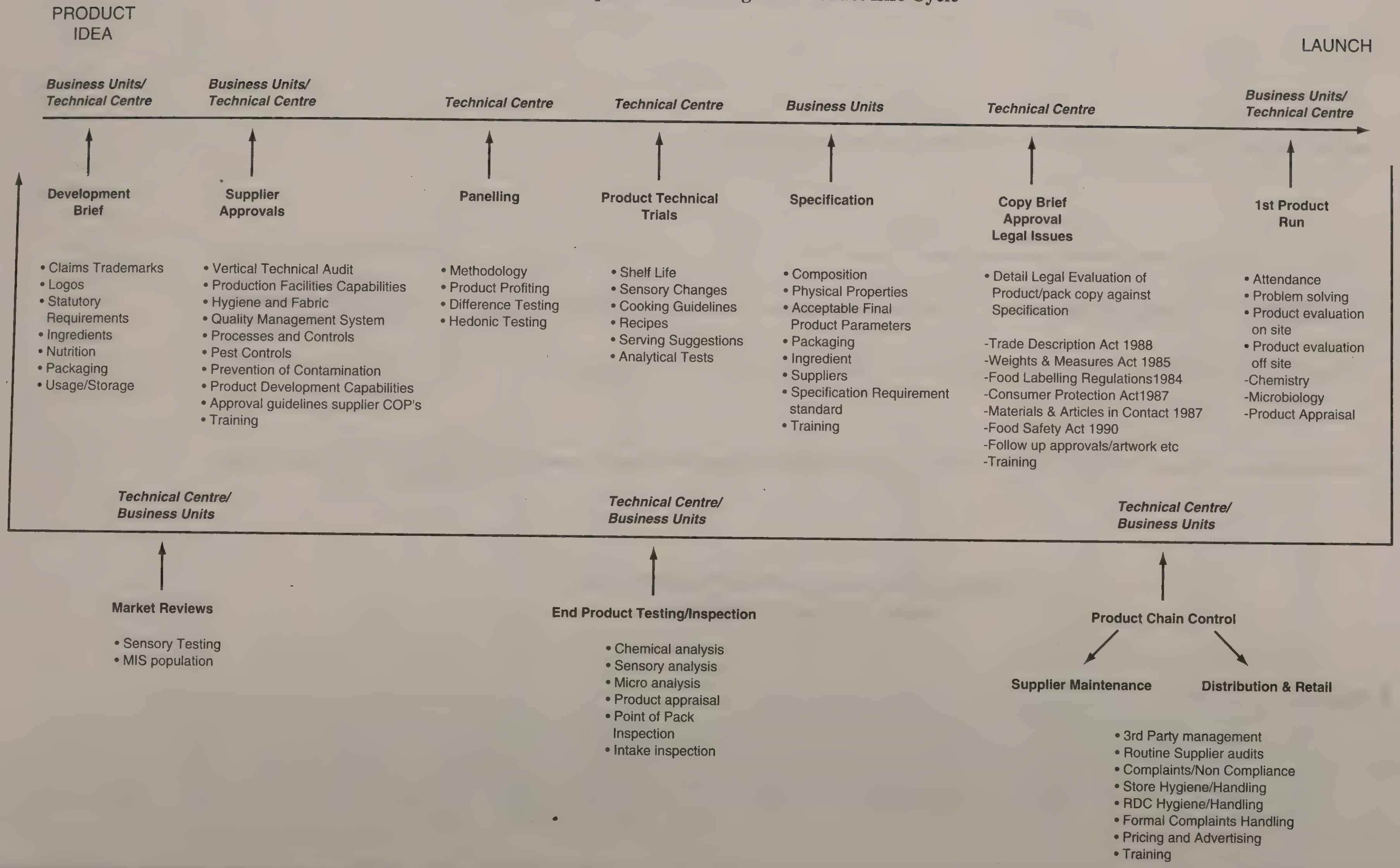
20 October 1997

ANNEX

Product Chain Control
Span of Safeway Technical Activity



Technical Requirements throughout Product Life Cycle



Examination of Witnesses

MR MARTIN VAN ZWANENBERG, Divisional Director, Food Technology, Marks and Spencer PLC, and DR ALASTAIR ROBERTSON, Director of Technical Operations, Safeway PLC, examined.

Chairman

407. May I half apologise for forcing you as competitors to sit at the same table but the exigencies of our timetable are such that we had no choice. Many of the issues will be common. I apologise for the discourtesy if such it is. I believe you want to make an opening statement, Mr van Zwanenberg, so perhaps before Safeway introduce themselves you could introduce yourself and make your opening statement and then we will go to Safeway.

(*Mr van Zwanenberg*) I am Martin van Zwanenberg, I am the Technical Divisional Director of the Food Division at Marks & Spencer and I have worked at Marks & Spencer for 30 years. Marks & Spencer have worked in partnership with our dedicated food suppliers for 50 years. In that time food safety has been a fundamental element in the development of our successful food business. At Marks & Spencer we only sell our own brand, St Michael, foods, most of which I am glad to say are made in this country. Many of these are chilled, refrigerated fresh foods, an area where we believe the United Kingdom food industry leads the world. These are made to our specifications which include detailed food safety requirements. Today this is called HACCP. With our suppliers we apply five principles to producing safe food. First, detailed knowledge of the raw materials used: traceability. Second, hygienic manufacturing conditions. Our experience shows that clean food cannot be made in dirty factories. Third, appropriate technical assessment and control at all stages in food manufacture. Fourth, a trained healthy and skilled workforce which will understand and apply the disciplines required to produce safe food. Finally, application of these high standards of control from the plough to the plate. Our experience at Marks & Spencer is that good science well applied is fundamental to the success of our business. In this food safety is no exception. Where the knowledge is lacking well funded research, funded by us and our suppliers, is essential. All our experience shows that senior management, whether on the farm or in the factory or in the shop, must have a commitment to food safety as their top priority. Consistent enforcement of product specifications and hygienic conditions are essential if standards are to be improved. Customers have an absolute right to expect safe food. Our job is simply to supply it. We welcome the creation of the Food Standards Agency. We must provide the customers with increased confidence in the food that they buy, therefore its first priority in our view must be food safety. Thank you.

408. I think a lot of that Safeway will find themselves in agreement with though not absolutely everything. Mr Robertson, perhaps you would like to introduce yourself and your colleague.

(*Dr Robertson*) Thank you and good morning. My name is Dr Alastair Robertson and I am the Director of Technical Operations for Safeway. With me is Bill Hamilton who is the Director of Public Affairs for Safeway. I will be your main respondent today on the food safety questions but if there are questions of a more general nature, then Mr Hamilton is here to be able to answer some of those. As with Marks & Spencer, very high on our agenda is to establish food safety across all elements of the food chain, both in reality and in perception. Food safety for us is not only our legal obligation associated with our brand, but we consider it to be a fundamental right of our customers. We anticipate today that there may be two major questions from the members: one is our attitude towards licensing in the industry and the other is our view on the relationship between the issues of diet and health and the Food Standards Agency.

409. May I ask you both separately to begin with a technical question? How many scientists and technologists do you actually have within your companies working in the food business? How much of their time goes into food safety activities? How much do you spend on food safety procedures including research? Just a feel for your general level of commitment.

(*Mr van Zwanenberg*) Marks & Spencer have 80 graduate food technologists on our team. This covers a wide range of specialities including microbiology, food hygiene, environmental health and also animal scientists. However, our suppliers, of which we have about 400, have at least ten times that number of food technologists working for them.

(*Dr Robertson*) In Safeway we have 139 technical personnel; 115 of those are graduate scientists and technologists. 67 technologists work directly with the business, producing and developing food products and ensuring their safety. We also have a central team which deals with R&D in terms of food technology and science; chemists and microbiologists. We have hygiene and safety experts who are former EHOs working for us and a number of home economists. Many of the technical personnel are qualified to PhD level.

410. I notice in Safeway's evidence that you have teams of inspectors who visit abattoirs on a regular basis. This is a matter we were just pursuing with the BRC before you came in. They ensure that hygiene standards are being met. Does that mean you set a higher standard in Safeway than the Meat Hygiene Service sets?

(*Dr Robertson*) We have our own codes of practice which apply to the meat abattoirs. We not only have teams of inspectors which inspect those abattoirs but we actually have people on site in the plant full time. That is probably a difference; the way that we involve ourselves with the industry to guarantee that we have traceability across the whole of the meat chain. In addition to that we do employ ADAS to inspect our traceability independently on our behalf.

411. Would you look forward to a day when the Meat Hygiene Service does its job so well that you can significantly reduce your activities in that area?

(*Dr Robertson*) We take a responsibility for our suppliers but our suppliers also are required to undertake their own QA work. We would expect to

[**Chairman** *Cont*]

help our suppliers whenever it is necessary to do so, but I would like to see our suppliers standing more on their own feet.

412. Do you have a view on that?

(*Mr van Zwanenberg*) We work in partnership with our suppliers. We expect our suppliers to provide a technical service. We work in partnership with them and our technologists constantly visit our sources of supply, not only to ensure that the existing standards are being met but also to improve standards and to work on new technology which we are always trying to apply to the business to improve standards and to improve safety by improving methods of assessment and methods of control throughout the supply chain.

413. May we turn to some specifics and *Salmonella*? You would probably agree that the major problems with food poisoning are generally associated with poultry and eggs or red meat and meat products so these are the main areas of contention concerning *Salmonella*. What steps have your companies taken to reduce contamination of poultry flocks, particularly with *Salmonella*?

(*Mr van Zwanenberg*) Customers have an absolute right to expect safe food. Together with our suppliers we are aware that *Salmonella* is a known pathogen and is present in poultry. We know also from the Public Health Laboratory that apparently this is the second most common form of food poisoning in this country. We also believe, increasingly so, that we cannot expect customers in their kitchen to be the only source of controlling safety. Therefore we, together with the whole of our poultry supply chain, including breeders, farmers, feed mills, poultry processors and feed manufacturers, have in place a programme aimed at the elimination of *Salmonella* from poultry. Our strategy is based on a number of opportunities. First of all to have a *Salmonella* free parent flock. Second, we must have clean poultry feed from properly audited and run mills. Third, hygiene must be improved throughout the farming chain. Fourth, tight control must be carried out of hatching. We believe hatcheries should be like a high risk food factory. There must be upgrading of the abattoirs. We have also introduced drip-feed packaging, clear packaging, so that if there is drip loss from the birds during transport and storage this is contained within the pack. We must also have a robust cold chain. I am pleased to be able to report to this Committee that the level of *Salmonella* in St Michael chickens has been reduced from over 40 per cent, as reported recently by the Consumers' Association—and we would agree with those figures—in 1995 to less than 10 per cent today. In certain of our suppliers, we have actually got *Salmonella* free chicken. In addition to that we are seeing a reduction at the same time in *Campylobacter*. We believe this is mainly due to improvement in hygiene on the farms, including people just changing their wellington boots when they go into poultry houses. We are now seeing *Campylobacter* running at less than 10 per cent.

414. Marks & Spencer have a reputation for being a premium priced company. Can you achieve those kinds of levels of improvement—I congratulate you on them—without putting up the price of the product to the consumer?

(*Mr van Zwanenberg*) This requires not only investment in people, but also investment in time and effort and some investment in poultry. Our poultry on our counters is very competitively priced.

415. Do you have a target in Safeway for *Salmonella* levels in raw chicken and chicken pieces?

(*Dr Robertson*) It is important to point out, in relation to your last question, that the whole of the *Salmonella* issue in poultry has been found to be reducing over time. The figures I have from the Advisory Committee on the Microbiological Safety of Food shows that between 1979-80 and 1994 there has been a drop from 79 to 41 per cent on frozen chickens. That is across the entire industry. That has been happening whilst poultry has been decreasing as well in cost. On chilled poultry between 1987 and 1994 there has been a decrease between 54 per cent and 33 per cent in the industry. I do not know what the current figures are, but I suspect that the incidence of *Salmonella* is still decreasing; at least I am told that it is. This has happened because all retailers are putting in codes of practice to their producers which deal with welfare and housing, hygiene, feed standards and also deals with such things as medicines and hormone growth promoters. At Safeway we are doing quite a lot of work with the Institute of Animal Health at Compton where again we are looking at vaccines and vaccinations on both broilers and layers. We are looking at improved standards of feed. At Nottingham University we have been looking at the epidemiology of *Salmonella* during poultry production, looking at houses, hygiene control in houses and rodent transmission of *Salmonella*. All these things are having effect across the industry.

Mr Todd

416. Do I get the impression that Safeway do not have any data on the proportion of chicken pieces and chickens sold with *Salmonella* in them?

(*Dr Robertson*) No, we do our own analytical programme.

417. You gave the general data for the industry as a whole but not your own. Would you care to share that?

(*Dr Robertson*) We obviously like to have the general data for the industry, to see how we are doing as part of that, but our own data is in line exactly with what we are seeing across the industry.

418. From my memory of that, that was 33 per cent.

(*Dr Robertson*) 30 per cent to 40 per cent, decreases over time.

419. The Marks & Spencer's figure was less than 10 per cent contamination with either *Campylobacter* or *Salmonella*. What is yours?

(*Dr Robertson*) I do not have the figure today but I can certainly get the figure and send it in to the Select Committee.

Chairman

420. If there is anything in commercial confidence we can consider things which are commercially confidential.

(*Dr Robertson*) No, there is nothing confidential. We share our data.

421. It would be interesting to know whether Marks & Spencer's figures have been independently audited?

(*Mr van Zwanenberg*) I am glad to report that we and our suppliers spend over £1 million a year on testing for *Salmonella* in poultry. The number of results we are talking about run into many hundreds of thousands. We do have independent testing carried out by Camden Research.

Mr Todd

422. Do you sample the food in your shop?

(*Mr van Zwanenberg*) Our suppliers sample food as it leaves them and goes to our stores. We have an independent checking of our product which is taken by independent people from our stores and Camden carry out an analysis.

423. Is there a comparable system for yourselves?

(*Dr Robertson*) Exactly. Our work is done for us by Law Labs who take the samples directly from store and sample and analyse at that point.

Chairman

424. If you were to come up with a new novel method of reducing *Salmonella* carriage at any level of the food chain, some bright new idea, would you keep it to yourselves to secure a commercial advantage or would you share it with the Government and your competitors?

(*Mr van Zwanenberg*) We should talk first about research because this programme is not just about hygiene on the farm. We, together with ten of our suppliers, have funded a chair at Cambridge University into animal health, food science, food safety. Professor Duncan Maskell is now researching the possible use of vaccination for *Salmonella*. We believe that food safety is a national issue, not a competitive issue. If we have information which is of use to the supply chain in this country, we will provide it to the supply chain and we do talk to those whom we consider our competitors about some of the work we are doing.

425. Is that true for Safeway as well?

(*Dr Robertson*) That is very true of Safeway. We do not see any competitive advantage being taken out of food safety as an issue. We try to move our best practice and help other companies use that best practice. We work collaboratively with other groups to look at these issues. We also fund a course at Queen's University, Belfast on food safety with the hope of increasing the calibre and skills of the people going into the food industry.

426. Turning from chicken and moving on to meat products, we have heard some quite worrying evidence about the level of contamination in sausages. PHLS tell us that something like 17 per cent of sausages were infected with *Salmonella*. Do you have any figures for your own companies' levels of sausage contamination?

(*Mr van Zwanenberg*) We believe *Salmonella* occurs at about one to two per cent in meat products and about eight to ten per cent in fresh pork. We have carried out many samples on sausages and this year we have not actually had a positive *Salmonella* on a sausage under our brand and that is the only brand we sell.

(*Dr Robertson*) Exactly true of Safeway. We have analysed this product quite extensively and found no *Salmonella*.

427. If I recall the evidence we received, it did suggest that it was concentrated at the cheaper end of the market and that would obviously be endorsed by the kind of reaction you are giving us today.

(*Dr Robertson*) There is a suggestion that maybe the *Salmonella* is higher in Mechanically Recovered Meat containing products and that is an ingredient we do not permit in any Safeway product.

Mrs Organ

428. There has been a debate about the labelling requirement of soft cheeses made from unpasteurised milk. Do you sell raw milk soft cheeses? If you do, what is your policy on the labelling of such cheeses?

(*Mr van Zwanenberg*) We do not sell unpasteurised soft cheeses. We believe the use of unpasteurised milk in soft cheeses raises particular issues regarding pathogen control. If one sells unpasteurised soft cheeses we think they should be clearly labelled as such.

(*Dr Robertson*) With Safeway there is likewise little demand for unpasteurised cheeses but we have one store, which is the Thomas More store, where we do sell Brie de Meaux and there is a demand for it. It is our policy to have point of sale information. We have not put it directly on the label, because Brie de Meaux is a branded product; we have point of sale information pointing out the CMO's comments on *Listeriosis*.

429. If I go along with my trolley randomly picking cheeses, when I get home it will not be on the cheese that I have but there will be a marker above where the market line is which says "Note, this is cheese made from raw unpasteurised milk".

(*Dr Robertson*) Yes, it is a CMO warning, a Government warning.

Mr Todd

430. The farm assurance schemes which you describe are admirable and you see these as providing some advantage in the marketplace. Do they actually help to address the issue of contamination at all? It was not actually listed within the criteria except in the general sense of improved animal care and so on.

(*Dr Robertson*) We believe that they will address issues of contamination. All of our assurance schemes are based essentially on HACCP principles. As a company we believe in the fundamentals of HACCP principles and we believe in looking at HACCP principles right the way through the chain. We also believe that it is better for these sorts of

[**Mr Todd** *Cont*]

standards and codes of practice which are being used, farm assurance schemes, to be industry standards applied to and acted upon by the whole of the industry as opposed to them being Safeway schemes. I reiterate that we do not see competitive advantage from food safety. It is important that animal welfare schemes and company traceability schemes work right across the industry and everybody benefits from them. To that extent we have been working closely with the food supply chain, both on the Assured Produce Scheme with the NFU, to reduce levels of pesticides and with the BRC to establish a suppliers of own brands, code of practice. These not only implement standards which are based on the best practice and sound science, but which are independently audited by people who have the correct skills for undertaking that auditing. In that sense we are involved very closely now with the United Kingdom accreditation service to improve the level and understanding of the auditors when they audit to our standards.

431. One of the particular aspects of this is your selection of abattoirs. Obviously you use a very small range of abattoirs. I do not think you mentioned the number. You say only approved abattoirs.

(*Dr Robertson*) For beef we are only using two abattoirs and boning plants.

432. Does that not imply a longer distance to slaughter of animals you select? It might not, because it depends where you source them from. Does it not imply that?

(*Dr Robertson*) Our centrally packed processors and abattoirs are based one in Cambridgeshire and one in Scotland. The majority of our beef is sourced from the UK in those areas. The travel distance is relatively short to either one of those.

433. You would be familiar with the fact that the journey to slaughter will increase the risk of dirty animals or injured animals at the other end.

(*Dr Robertson*) Yes; of course. Correct. Our code of practice covers the transit of animals.

434. From what you have seen so far of the schemes you have introduced, what impact has it had on microbiological standards?

(*Dr Robertson*) Our microbiological standards on all the analysis we undertake are sound and good. We believe by having centrally packed products that we have much better control. We have dedicated staff in those plants so we are able to take our specifications and operate to them day after day with incoming beef which is bought to our own standards.

435. Do you want to add anything from the M&S perspective?

(*Mr van Zwanenberg*) In the mainland we only sell British beef. We take fresh beef, we have a select farm scheme which is our own scheme which enhances some of these national schemes covering aspects such as welfare. We want to form partnerships with the farming community; they want to form partnerships with us. We have a long-term relationship with them. Our requirements in terms of animal welfare and veterinary control even covers things like fire risks on farms. When it comes to packing we deal with only four specific abattoirs and two meat packers, all of whom have committed resources to our business. We believe that gives us not only the best food safety but also provides consistent eating quality which is what our customers expect from us.

436. This is another area where we are talking to the top end of the market and certainly from our visit and discussions with the Meat Hygiene Service part of the difficulty is controlling the lower end of the market with cheaper suppliers to our consumers.

(*Mr van Zwanenberg*) I would say to you the consumer has a right to expect safe food whatever price they pay for it. Safety is not an issue of a competitive nature. Quality in terms of eating quality, the amount of meat in a pie, that is a quality issue and that is a competitive issue. When it comes to food safety, wherever customers buy food they should have the confidence that it is safe.

Chairman

437. May I ask you about fruit and vegetables? We are receiving an increasing amount of evidence about the concerns over the safety of fruit and vegetables, particularly those products which are eaten raw like salad products. This is at two levels: both the domestic product with the issues about sewage sludge disposal on farms and also imported foodstuffs about which we hear a lot of evidence now that waterborne contaminations, infections, organisms, are causing problems with imported products. What steps are your two companies taking to address these concerns?

(*Dr Robertson*) The question is a legitimate question and nobody really understands the size of the problem or its scale at this moment. We are working closely through the FDF and with the BRC jointly to look at that particular issue. We firstly need to understand whether we have a problem and whether the increase in raw sewage sludge on land is likely to make that situation worse. The answer to your question is that we are collecting data to understand that particular issue. I am concerned that if those data are gathered and made available to the consumer at the moment that we could create another scare which we hardly need to have at this moment.

438. Imported products?

(*Dr Robertson*) We are testing imported products. We have our suppliers test them as well. We have the same level of criteria for imported products as we do for our UK products. We are testing for some of the organisms which we see. We are not finding major issues at this moment. We have not found any issues in fact thus far but we are concerned about the use of raw sewage.

439. Would that be your experience too?

(*Mr van Zwanenberg*) We support the evidence given last week to this Committee by Professor Georgala on the potential risks associated with pathogens in fruit salads and vegetables and the possible problems resulting from the application of organic waste and human biosolids to agricultural land. We believe and we know from the research we have done that we cannot rely solely on the washing of fruit salads and vegetables to eliminate pathogens, though it helps. It is therefore essential for us to prevent recycling of pathogens through the

[**Chairman** *Cont*]

application of these organic wastes and biosolids. The procurement of all raw materials for us is from approved and audited sources, many of which were set up specifically to operate for us. This includes overseas. We insist on the same high standards overseas, we know where the product is grown, we know how it is grown and we do have in place both overseas and in this country a continuous monitoring system of the microbiological situation. However, we do believe that there is an urgent need for research by the Government and industry into this potential food safety issue which can result from the use of biosolids on the land. Once that research is carried out, then we can apply some standards but we need urgent research and we are already beginning to undertake it.

440. In both your answers you have emphasised the problems of the domestic horticultural industry. Logically I would have thought that some of the more exotic products you import from third world countries might have been rather more exposed to these dangers than our own domestic products but you are saying that is not the case.

(*Dr Robertson*) We have no evidence to lead us to believe that it is any different abroad than it is from this country.

(*Mr van Zwanenberg*) The amount of sewage sludge in use in this country is increasing. We have no evidence to suggest that with the standards and controls we have overseas there is any greater risk from overseas on this particular issue than there is potentially in this country.

441. To some extent we are asking you to crystal ball gaze here, I appreciate that. Are there any other issues over there on the distant horizon affecting other food products which are giving you cause for concern at present and sleepless nights?

(*Mr van Zwanenberg*) Douglas Georgala raised a number of issues which need further research including virology. If we knew them we would be dealing with them. If we know something is emerging, our team and the team of our suppliers, together with research organisations try to tackle them in advance.

Mr George

442. You gave some very helpful information in your first answers on the amount of spend, the amount of staff employed as scientists and technologists within your companies. I just wanted to differentiate between the science of monitoring systems in your suppliers and any R&D which you undertake which adds to the sum of human knowledge on the subject of food safety rather than the internal workings of your own system. You have both indicated that you are working in that field. Could you give me an indication as to how much you spend specifically on that type of research and development and then as a percentage of the turnover of your business if that is possible?

(*Mr van Zwanenberg*) I will have to answer you generally. First, good science well applied is a principle in our business and it does not just cover foods it covers every area of clothing, our own engineering side. We have set up a specific chair of research and that cost £1.5 million of which Marks & Spencer paid over £1 million. We do not limit ourselves to a budget for food research. It is an important area of our operation. We make money available when it is necessary, together with our suppliers and many millions of pounds are being spent on food development, food research, every year, not just in this country but overseas as well in order to obtain knowledge and to develop a business for the future. Some of this research is focused on food safety.

(*Dr Robertson*) We at Safeway have a dedicated R&D team. The function of that team is to look into new processes and procedures but also to look at the work which may be needed to underpin some of the food safety issues as they arise. I would have to talk about this in general terms but as a function of the business we spend probably about £5.5 million, not all on R&D but totally across the board. What we try to do with our R&D is to work with other members of the industry because, as we have taken pains to say, we do not think food safety is a commercial issue. It is an industry issue and we can make better use, more effective use of funds if we work jointly with other members of the industry through the BRC or with the Government in LINK programmes. We try to use our money in the best way and the most effective way to understand these issues.

443. You both interlink your research and keep an eye on what other research is going on in the area of food safety.

(*Dr Robertson*) That is right.

444. Do you share your knowledge with others and how do you do it, if you do?

(*Mr van Zwanenberg*) Where food safety is an issue we share knowledge. If it is a competitive issue on development of an individual product of course we do not. I should explain for example when we were asked about safety of fresh fruit, salads and vegetables, the amount of effort and research being put in by our team and by that of our suppliers is enormous and as yet we have not identified that this is a particular issue. We would not be selling the food if we thought it was an issue. We are satisfied with the present systems of monitoring that we are not getting an issue. We are concerned for the future as to what this might lead to. Therefore the research is looking to the future and we, together with our colleagues, are funding that. We have a number of cross industry operations, including link projects which are focused on a number of these things.

(*Dr Robertson*) We are working through three particular fora at the moment. One is with the BRC, through the Food Technical Advisory Committee, where we are dealing with specific issues of concern as they emerge. We are also working latterly through the FSAC which was set up by the food retailers in 1988 and we worked through Nottingham University to understand some of the issues which have arisen in that way. Finally, I have just set up with the Institute of Grocery Distribution the Directors' Technical Forum where not just the food retailers are working together now but the food retailer technical directors together with the Technical Directors of our main suppliers. We are working collaboratively there and that is the function I mentioned earlier where we were talking about raw sewage sludge on land. It is

[**Mr George** *Cont*]

through that forum that we started to investigate the process and that has joined the work of the BRC together with the work of the FDF.

445. I know that in Safeway's memorandum you have specific comments on the distribution of MAFF funds in researching into food safety and you are critical of them saying that it does not reflect the priorities of either present or emerging issues. You are also criticising MAFF for being stuck in research on past issues in many senses. Could you simply elaborate on that and indicate where you think the priorities are? I guess it applies to both but particularly Safeway.

(*Dr Robertson*) We believe strongly that food safety is an issue which covers the entire food chain and very often should be looked upon as a food chain issue as an end-to-end process. The comments we made were in relation to work on radionucleotides and in particular work on dioxins which to us seem to have been an issue which was a problem some years ago. If you look at the surveillance programmes now, they show it to be either a decreasing issue or not an issue at all. We see many surveillance programmes from MAFF which are showing similar results. At the same time we are seeing major increases in real concern over BSE, *E. coli* 0157 which is a food chain issue and needs to be looked upon like that. The point we were trying to make is that the food industry is a very dynamic industry and is moving very quickly, sometimes involving leading edge technology. We need to be aware of where it is going and to set up science research programmes which take account of those changes.

(*Mr van Zwanenberg*) I am glad to say we have regular meetings, together with other technical directors from retailers, with MAFF to talk about future research. We cannot deal with the past. I am not here to criticise the programmes they have, they were obviously set in place for a particular reason. The question is: how is the research funding of £125 to £130 million to be spent in the future? That is what we are discussing with them. We have some thoughts, others have other thoughts. Obviously food safety is one, consumer issues are another, nutritional information is another which is probably actually better dealt with by the Department of Health. We are in discussion with them as to the future and I must say they are very keen to listen to some of the views that we and our suppliers are expressing.

Ms Keeble

446. I want to ask about the Food Standards Agency. In view of your comments about long-term in relation to food consumption being no less important than short-term food safety issues, do you believe that nutrition and diet should be inside or outside the remit of the FSA?

(*Dr Robertson*) We believe very clearly that it should be inside the FSA. The reason for that is that Safeway has worked actively in the last six years on the nutrition task force in England and on the working party on Scottish diet set up by the Scottish Office in 1992 and subsequently with the Scottish diet action group. It is very clear that there is a major concern about long-term health which is associated with diet. The evidence is very strong that cancers and cardio-vascular disease are associated with diet. The working groups on which I represented Safeway, have come out with some very good information, have brought the industry together, have developed strategies about how the industry might go forward but generally it stops short there and the industry is then left to implement those strategies, which without coordination, tend to be relatively unfocused.

447. That would presumably have to be very closely allied to research so that you are sure that the advice which was being provided actually had scientific evidence.

(*Dr Robertson*) Absolutely. The reason I believe it should be inside the Food Standards Agency is because the Food Standards Agency is an independent body which can look at long-term continuity of these issues and nutrition and diet is a long-term issue which needs to be looked at in that way. It (i.e. the FSA) can manage and direct, together with the industry, many of the solutions which are required for diet and health. The one thing we would not support is any prescriptive issues associated with standards on food and diet.

448. Which would be what?

(*Dr Robertson*) Bringing in standards on sugar or advertising, that kind of thing. What we want to see is a long-term strategy which involves industry. After all it will probably be the industry which provides products, minimises the fat in products over time, undertakes much of the research which will be required to provide products which are satisfactory to consumers but may not contain the same levels of fat.

449. It might be helpful if that could be expanded, perhaps outside this meeting, because we are on rather a tight timetable. You specifically excluded sugar, whereas I would have thought that sugar and baby food issues, where you have your own-brand baby foods, would be some of the things where personally I would have thought those should be specifically in because of clear safety issues.

(*Dr Robertson*) I did not mean to exclude sugar. What I meant was that the whole of nutrition should be incorporated within the remit of the Food Standards Agency but we are not supportive of bringing in regulatory processes to change people's diet in a prescriptive way.

450. It is for the food manufacturers and not for people choosing how much sugar they eat or how much bread they eat.

(*Dr Robertson*) Yes. Probably the concern within the food industry is about the term "standards" associated with nutrition in the Food Standards Agency. A lot of the emotion would be taken out of the debate if the word "standards" might be transferred to the word "safety" and it became a Food Safety Agency dealing with long-term and short-term safety issues.

451. Does Marks & Spencer agree with that?

(*Mr van Zwanenberg*) Some bits and not other bits.

452. Could you be specific what your point of view is because it helps to widen the debate a bit to have both views?

[**Ms Keeble** *Cont*]

(*Mr van Zwanenberg*) The first priority as far as we are concerned of the new agency should be to ensure that customers have confidence that the food they buy is safe. Safety of food not only includes microbiological safety but chemical safety, foreign body control, absence from rodent and insect infestation, which are fundamental to ensuring the continued confidence of the customer. We believe the Food Standards Agency should also consider the health of individuals in terms of nutrition at an appropriate time but not necessarily as its first priority. We believe the food industry has to provide a range of foods which enables consumers to have a balanced diet. The Food Standards Agency should be involved in appropriate research and education to enable the customers to understand fully the issues involved in diet.

453. One other question about the role between the Food Standards Agency and the major retailers. The impression I get is that two things could happen. One is that if we follow Safeway's advice and the Food Standards Agency works closely with retailers there is an issue about whether it is actually independent. The second thing is that if it is set up without certain aspects being in, you could end up having a Food Standards Agency which has virtually no relationship at all with the major retailers because your standards, dare one say it, quite often are rather better than the standards which might be set by the Food Standards Agency and the full impact of it would perhaps tend to come on other areas of the food chain. What should the relationship be?

(*Dr Robertson*) I believe the relationship between the Food Standards Agency and the food supply chain should be a close one. I do not believe it is possible to understand the issues and to prepare and propose the solutions to those issues, unless you have a full and comprehensive understanding of all perspectives of the food industry. If independence is perceived as an issue, open working processes within the Food Standards Agency should eliminate that concern straight away.

(*Mr van Zwanenberg*) We believe the decisions of the Food Standards Agency should be based on the best scientific knowledge. In his report Professor James calls for advice mainly to come from independent academic scientists with only a limited contribution from industrial scientists. We actually disagree with him. We believe that the relevant food experience is essential in making recommendations that will work in practice and that includes consumer groups, food processors, food retailers. The industry in this country is unique in the sense that the chain is a cohesive one, more so than in any other country that we know. All members of the food chain should be involved in giving practical advice to any advisory committee.

Chairman: For the record, Safeway were nodding in agreement with those remarks.

Mrs Organ

454. We talked earlier about looking at production of fruit and vegetables and practices in other countries and how that compared with what was happening here. Can we move on to thinking more about poultry and egg production? How extensively do Marks & Spencer investigate production systems in other countries? How can we learn from them? How could we improve on our rates of pathogen carriage as a result of what they are doing which may be much better practice than here?

(*Mr van Zwanenberg*) The majority of our food is produced in this country. We apply exactly the same standards of food safety and quality and hygiene wherever we buy the food. If we import food we do not buy it because it is cheaper, we buy it because it brings some special skill or some local tradition that we cannot buy in this country. Our experience overseas reinforces our opinion that the UK food industry is world class, especially for chilled perishable foods. We believe that there are instances where overseas sources of supply have benefited our food approach in the UK, for example we have brought back here the standards applied in New Zealand in abattoirs for lamb. We believed they were outstanding and we have brought them back here. We have investigated carefully the approach the Swedes have taken to eliminate *Salmonella* and much of the work we have done is based on the knowledge we have learned from there. Work on pig welfare is well advanced in Roskilde in Denmark and we have gone out and tried to use it. Yes, we have learned from overseas but we apply the same standards overseas as we apply here.

455. I saw you nodding your head, Safeway, when we were talking about the New Zealand lamb abattoirs. Maybe you would like to add to that?

(*Dr Robertson*) Yes, much of what Martin van Zwanenberg has said stands for Safeway as well. Our technologists are travelling worldwide all of the time. Whilst they are doing that, they are looking at production systems in other countries. Where we see benefits of those either associated with safety or quality then we tend to implement them with our suppliers.

(*Mr van Zwanenberg*) Because we have an overseas business as well we do note differing approaches to food law enforcement overseas. We are particularly interested in the benefits of a nationally coordinated authority with staff who enforce it and know about food when they enforce it. That occurs particularly in France where they have a team of inspection people who have been properly trained in food science and technology and apply that when they are enforcing the law.

456. Would you be advocating that sort of system to be implemented here?

(*Mr van Zwanenberg*) We certainly would, yes, because we believe that the people who are inspecting food premises and looking at food safety must have knowledge of that in particular; they should be specialists in it not generalists.

Mr George

457. Pathogen reduction. Marks & Spencer say that food irradiation is not an acceptable answer. We have just had news from America that the Food and Drug Administration there has approved the use of irradiation to kill harmful bacteria such as *E. coli* in beef where they have had particular problems

[**Mr George** *Cont*]

recently. How strongly do you feel that irradiation is not an acceptable answer? Does it not at least have a short-term benefit whilst there is still a problem?

(*Mr van Zwanenberg*) We feel very strongly that in the short term or long term irradiation is not the answer. We found that good results can be obtained in food safety by applying traditional known food science and technology and where necessary improving the research and development. In our experience irradiation can be an excuse for poor standards, it can be used to cover up food which was in fact poor when it started. In our view it is not acceptable to sterilise dirty food by irradiation. Finally, and most importantly as far as the consumer is concerned, in our view to put "irradiated" on the packaging suggests that it was "Chernobylised".

Chairman

458. We have been talking a lot about longer term issues, issues of more general public concern and very important issues. Last week we had a specific issue to contend with, we had the issue of the beef on the bone controversy. Was your response to that controversy right? Was the Government's advice right or were the consumers right who went out and bought beef on the bone like there was no tomorrow?

(*Mr van Zwanenberg*) Good science well applied is the principle of our business. If the scientific advice was that we should not sell it, we should not sell it and we took it off display as soon as we heard the advice.

Ms Keeble

459. What are Safeway doing?

(*Dr Robertson*) Exactly the same response.

460. Did the customers complain?

(*Dr Robertson*) We are actually undertaking customer research at this moment.

Chairman

461. Are you going to withdraw cigarettes from sale in your stores? You sell cigarettes in your stores. They are much more dangerous than beef on the bone. Are you taking them out? Marks & Spencer do not sell tobacco products.

(*Mr van Zwanenberg*) No.

(*Dr Robertson*) If Government bans it (i.e. tobacco), we will take it off the shelf.

462. Would you agree that the risk is much higher from smoking than from eating beef on the bone?

(*Dr Robertson*) Risk analysis and making sure that consumers understand the relevance of risk is particularly important. That takes me back to the Food Standards Agency again. I believe they have a major role in managing the expectations of the consumer as far as risk is concerned and how that risk relates to other activities they undertake in their lifestyle.

463. I do not want to labour this point because it is the most interesting of all, but you always rely on science though there are very few absolute answers even in science. You often have to make balanced judgements. SEAC offered three different judgements on the basis of science and the Government took one of those three bits of advice. Surely should not we politicians sometimes say that individuals should make up their own minds about risk rather than scientists telling us everything is bad for us?

(*Mr van Zwanenberg*) We interpret risk on the science which is provided for us. Where the science does not exist we try to research it. Obviously customers matter. Our business does not exist without customers. Keeping them alive is even more important than anything else, if I may say so. If there is a risk involved in food safety, however small, our job is not to put that risk to our customers. Our customers must have confidence. If the Government had not banned it (i.e. beef on the bone), they would have had equally the same controversy.

464. Even with ten per cent *Salmonella* poisoning in your chickens if one of your customers does not cook it properly, there is a real risk of exposure to real food poisoning and a much, much higher risk than the beef issue.

(*Mr van Zwanenberg*) That is why we are taking steps to try to eradicate *Salmonella* because we appreciate that risk and we want to eliminate it.

465. You are not banning chickens from sale in the meantime.

(*Mr van Zwanenberg*) No, but we give very clear cooking instructions and make it quite clear to the customer how to handle poultry. We also do not sell frozen chicken.

Chairman: We could go on all day but we must not. It is lunchtime. Let us go and eat some chicken or beef. Thank you very much indeed and thank you for being so tolerant in giving your evidence together. We do appreciate it.

Supplementary Memorandum submitted by Safeway Stores plc (C75)

In response to Mr Todd's question, regarding current Safeway data on the incidence of salmonellae in fresh chickens, our latest surveillance figures to December 1997 show an average incidence of 13 per cent with a range between 1.6 per cent–32.5 per cent.

These data represent the situation for Safeway as a mainstream retailer supplying over 70 million chickens a year to households across all socio-economic groups. As demonstrated in our evidence, the incidence of salmonellae in chickens has decreased dramatically across the entire UK supply base since 1989. Such reductions have been achieved by suppliers and retailers working openly and closely together, sharing best practice, and establishing codes of practice for poultry production based on sound science. Moreover, it has been achieved simultaneously with significant price decreases, making chicken a nutritious and healthy source of protein for all.

In my view, a complete absence of salmonellae in poultry is not an "at any cost option". Solutions based on this philosophy could result in tiered standards for the presence of salmonellae, with those foods containing the highest levels potentially being sold at the cheaper end of the market place. All consumers have an equal right to the safest food regardless of which socio-economic group they happen to occupy and price should not be a differentiator for food safety.

There remains further opportunity for improvement as scientific advances and technological improvements are identified and as retailers continue to encourage suppliers to incorporate these as best practice.

I use the above as an example to support the need for the Food Standards Agency to work with, rather than exclude, the food industry from its organisational structures and to ensure that policy and regulation is sensible and cost effective.

Retailers, through the BRC, have recently pooled their knowledge with other sector experts to complete a common technical standard for food suppliers. Compliance with the standard by suppliers will be inspected by third party bodies whose competence and independence has been accredited by the United Kingdom Accreditation Service (UKAS). The standard ensures a rigorous but level playing field for all suppliers across Europe who will require inspection from one approved competent body rather than a plethora of different organisations applying a multitude of standards.

The FSA should evaluate the impartiality, independence, rigour, and cost effectiveness of this approach before implementing additional inspection processes which add little other than cost to Government and industry alike. I would be happy to discuss this further outside of the Select Committee should you so wish.

19 December 1997

Supplementary Memorandum submitted by Safeway Stores plc (C77)

I am writing to confirm the Safeway position on the scope of the Food Standards Agency in relation to nutrition and to ensure that I did not mislead you in my response to your question on the subject at the Agricultural Select Committee on Tuesday 9 December.

There can be little doubt now that poor nutrition plays a major role in the onset of serious and debilitating diseases. The fact that these are normally offset until in later life and do not affect all individuals, is no reason to exclude them from the broader context of food safety. Natural food toxicants and mutagens also tend to impact on long term health but these are very clearly seen to be an issue of food safety and automatically fall within the scope of the Food Standards Agency. The cost of diet related diseases, both in terms of human suffering and to Treasury, are high.

Whilst there have been excellent diet and health initiatives in both England and Scotland over the last six years, these have fallen short of well directed implementation strategies. Cohesion of strategy can also be lost with changing governments and/or with differences of perspective regarding the importance of diet and health between various government departments. This is particularly so with regard to long term strategy on nutrition research.

It is for these reasons that we are supportive of nutrition within the scope of an agency that has the independence to develop, focus and direct long term nutrition strategy both in terms of the research needed to understand the subject better and in terms of achieving the necessary changes in dietary pattern across the Nation. The FSA can potentially withstand policy changes by successive Governments whilst providing a single point of focus for cross functional debate.

We would not, however, support the use of regulation on compositional standards as a means of removing food choice to achieve short term dietary reform. In making that point in my evidence I used sugar as an example of a nutrient that currently has poor press and where prescriptive standards in relation to advertising, volumes used or consumed, changes to pricing structure by taxation, could change the economics of entire sectors of the food industry. It is not surprising, therefore, that some areas of food industry would prefer the FSA to adopt a more traditional role in food safety where standards and regulation are understood and accepted.

In our opinion, the FSA's role in nutrition is to co-ordinate and direct research that underpins its long term strategy for dietary change. Such strategies require the co-operation, ingenuity and ownership of the food supply chain and this, in turn, requires inclusion in debates.

The participation of the food supply chain in FSA operations is also a prerequisite to achieving a full and balanced understanding of any food related issue, technical or otherwise. Impartiality and independence are achieved by operational transparency and access of individuals to the information that provided the rationale for contentious decisions.

I hope this letter helps clarify the Safeway evidence at the Agriculture Select Committee on Food Safety. If I can be of any further assistance in the debates on the FSA in relation to nutrition, please do not hesitate to contact me.

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HOUSE OF COMMONS SESSION 1997–98

AGRICULTURE COMMITTEE

FOOD SAFETY

MINUTES OF EVIDENCE

Tuesday 16 December 1997

Chartered Institute of Environmental Health
Mr David Statham, Mr Ian Coghill, Mr Graham Jukes and Mr Douglas Bloomfield

Local Authorities Co-ordinating Body on Food and Trading Standards (LACOTS) and Local Government Association
Councillor John Ryan, Mr Mike Ashley, Mr Don Boon and Mr Mark du Val

Association of Public Analysts
Mr Braxton Reynolds and Dr Peter Clare

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TUESDAY 16 DECEMBER 1997

Members present:

Mr Peter Luff, in the Chair

Mr Tim Collins
Mr Andrew George
Mr John Hayes
Mr Alan Hurst
Ms Sally Keeble
Mr Austin Mitchell
Mr Mark Todd

Memorandum submitted by the Chartered Institute of Environmental Health (C63)

Founded in 1883, the Chartered Institute of Environmental Health (CIEH) is a professional and educational body, dedicated to the promotion of environmental health and to encouraging the highest possible standards in the training and the work of environmental health professionals.

The Chartered Institute has approximately 9,000 members, most of whom work for local authorities in England, Wales and Northern Ireland. As well as providing services and information to its members, the Chartered Institute provides information to government departments and evidence to them on proposed legislation relevant to environmental health.

In 1993 the Chartered Institute became the World Health Organisation (EURO) Collaborating Centre for Environmental Health Management in Europe.

In 1996 an independent Commission was established by the CIEH to review environmental health. The report published in July 1997 is currently under detailed consideration, however the Commission made the following observations which are pertinent to the study being undertaken by the Agriculture Committee:

"Microbiological contamination of food is an important health issue. There is a worrying upward trend in food poisoning through established agents such as Salmonella and Campylobacter. Recent outbreaks of E.coli infection, coupled with the evidence that BSE (bovine spongiform encephalopathy) may be transmissible to humans through beef as a new variant of Creutzfeldt-Jakob Disease, have led both to widespread questioning of our food production system and a crisis of confidence in Government and its scientific advisers.

Industrialised animal husbandry and intensive farming methods have led to gross local pollution of waterways as well as damage to ecosystems. The issue, therefore, is not merely what we eat but how our food has been produced, processed, transported and distributed, and stored. Although modern mass production has given us an abundance of cheaper food, the wider social and environmental costs of current systems of production and distribution are now beginning to be counted.

The management of agriculture and the food industry has been dominated by producer interests acting in collaboration with their sponsor department—the Ministry of Agriculture, Fisheries and Food. There has been insufficient attention to the views and wishes of consumers, the public and local authorities. The role of environmental health professionals has been mainly confined to securing compliance with hygiene standards; they have been largely excluded from management of the food chain.

The Commission believes that promoting and regulating the food industry should be separate responsibilities. The creation of an independent Food Agency would be an important step in reforming these arrangements and establishing a powerful and authoritative voice for food safety and related environmental standards. It hopes that local authorities would be given a full part to play in the new arrangements. In the management of the food chain, local views and preferences as well as national standards and safeguards should be taken into account."(Ref. 1)

While the views of the Commission do not necessarily represent the views of the Chartered Institute, their view is reflected in the responses that have been made by the CIEH to "Pennington" and "James" reports which are included as appendices to this memorandum.

The cost of printing these Minutes of Evidence is estimated by The Stationery Office at £1,210.

FOOD SAFETY

1.00 INTRODUCTION

1.01 The Chartered Institute of Environmental Health (CIEH) is pleased to give evidence to the Agriculture Committee on issues of concern relating to food safety which any new food standards agency will need to address. The Committee has raised a number of important issues and this memorandum is formulated in the same sequence as the issues raised.

2.00 FOOD POISONING

2.01 The Chartered Institute notes with concern the overall continued rise in the numbers of reported cases of food poisoning *(Table 1)*.

Table 1

1985	*1986*	*1987*	*1988*	*1989*	*1990*	*1991*	*1992*	*1993*	*1994*	*1995*	*1996*
19,242	23,948	29,331	39,713	52,557	52,145	52,543	63,347	68,587	81,833	82,041	83,233*

*quoted by CDSC 26 September 1997.
Source: Communicable Disease Statistics published annually by the Office for National Statistics and the Communicable Disease Surveillance Centre.

2.02 There are three main routine sources of data on food poisoning in England and Wales. The first is the Statutory Notification System, in which clinicians notify the"proper officer" of suspected cases of food poisoning, and the data are collected by the Office for National Statistics. Since 1993 only 60 per cent of all food poisoning cases reported to ONS have been formally notified. Furthermore, many people who become ill do not seek medical attention and others are seen by clinicians who fail to notify. It is likely that the incidence of food poisoning, in common with other conditions is under-notified. Under-notification is largely attributed to doctors' ignorance of the legal requirements and failure to appreciate the importance of notification.(Ref. 2)

2.03 We believe therefore that the notification system currently in operation by general practitioners is not as effective as it could be in that general practitioners do not always notify food poisoning, or suspected food poisoning cases. We are also concerned that evidence would suggest that the statistics are just the "tip of an iceberg". Whilst we note that the collection of numbers of cases is an imperfect system and does not reflect true figures, it probably reflects overall patterns and is probably a genuine trend. The system of collection and reporting of statistics therefore needs tightening up to ensure that true levels of food poisoning are properly reported and recorded.

2.04 Additional information to support the overall trend of increasing food poisoning cases is contained in Table 2.

Table 2

	1992	*1993*	*1994*	*1995*	*1996*
Total Food Poisoning	63,347	68,587	81,833	82,041	83,233
Campylobacter[1]	38,552	39,422	44,414	43,876	43,240*
E.coli[1]	470	385	411	792[2]	660
Total Salmonella cases	31,355	30,650	30,411	29,314	29,111*
S.typhimurium DT 103	789	1,509	2,848	3,698	3,821*
S.enteriditis PT 4	16,987	17,257	13,782	12,482	13,184*

*Provisional figures.

[1] Confirmed isolations.

[2] Before 1995 laboratories examined bloody diarrhoeal stools for E.coli 0157, since 1995 they have examined all diarrhoeal stools.

Source (for Table 2): Food Poisoning Statistics—England and Wales, Communicable Disease Statistics published annually by the Office for National Statistics and the Communicable Disease Surveillance Centre.

2.05 There are significant gaps in the current understanding of, and statistical information on, food safety issues which the CIEH would wish to bring to the committees attention:

- Transmission of types of food borne illnesses through specific foodstuffs.
- Transmission of illness person to person.
- Why some people and some animals become infected.
- How do people or animals become infected?
- Why does everyone who is exposed to infection not become ill?
- Ineffective doses.
- Why are there peaks of E.coli 0157 excreted in cattle in spring and autumn?
- Why are there peaks of campylobacter in the summer?

2.06 We believe the Food Standards Agency should take strategic control of research from Central Government funding to focus efforts into finding out answers to these and other major questions.

3.00 The Economic Cost of Food Poisoning

3.01 It is difficult to estimate the true economic costs of food poisoning. However, a number of studies have been undertaken which identify the scale of the costs involved.

3.02 Food poisoning has been estimated to cost the UK between £0.5–1.0 Billion a year at 1988 prices. This assessment did not take into account the medical and social costs of the long term consequences of food poisoning and these figures were therefore probably under-estimating the range.[Ref.3]

3.03 Another study put the estimated costs incurred by hospitals for in-patient treatment of infectious intestinal disease in England from 1991–1994 at £83,139,685.[Ref.4]

3.04 A national survey of salmonellosis cases reported to environmental health departments in England and Wales between August 1988 and March 1989 attempted to estimate the costs to the public sector of human salmonellosis. The study concluded that, on the basis of the 1988 figures alone, public sector costs would have been about £6.8 million while costs to industry from lost production would have been £9.5 million. Furthermore, these were considered by the authors to be underestimates of the true costs since they took no account of the costs of unreported cases nor costs such as those arising from the general discomfort of the illness or lives lost.[Ref.5]

3.05 The cost of in-patient treatment attributable to infectious intestinal disease is high, but it represents only a proportion of the total costs of diarrhoeal illness. More detailed studies are needed to identify the total economic impact of infectious Intestinal Disease.

4.00 Food Safety Risk

4.01 The level of food safety risk at all stages in the human food chain including on farm agricultural practices, such as the use of feeding stuffs, agrochemicals and veterinary medicines require that farms must be included under the control of the food Standards Agency. The Food Standards Agency cannot have success where food starts from the factory and not from the farm. The live animal and the growing crops are part of the food chain.

4.02 Intensification of the farming industry has brought about many of the problems we see today. It is surely no coincidence that increasing figures seen for food poisoning have risen during the same period of intensification of farming practices.

4.03 The use of antibiotics routinely fed in intensive animal farming requires research to provide information on safety, use and for public information.

4.04 The World Health Organisation has made specific mention of the potential problems for human health of the emergence of antibiotic resistant bacteria:

> "More than half of the total production of antimicrobials world wide is currently used in farm animals, with a large proportion of antibiotics being administered in subtherapeutic doses, not to treat disease but to promote growth...as a result, two important human pathogens of animal origin, E.coli and Salmonella, are today highly resistant to antibiotics in both industrialised and developing countries. For instance, in the United Kingdom, the increase in multi-resistant strains of S.typhimurium isolated from cattle is paralleled by increasing resistance among strains of human origin. In Thailand, Salmonellae isolated from food animals are also highly resistant to the common antibiotics. These bacteria cause diarrhoeal disease and can lead to

> life threatening complications. Due to the globalisation of food supply and international travel, antimicrobial resistance among animal bacteria can affect consumers any where in the world." [Ref.6]

4.05 It is almost thirty years since the Swann Report to the UK Government on the "Use of Antibiotics in Animal Husbandry" stated in 1969:

> "It is certain that the use of antibiotics in animal feed produces large numbers of resistant organisms, including organisms with transferrable resistance, and that these resistant organisms may be transmitted to man....This resistance....could conceivably be transferred either directly or indirectly to such highly dangerous organisms as the typhoid bacillus (Salmonella typhi) such a chance meeting between resistant organisms and highly dangerous (pathogenic) ones could give rise to a potentially explosive situation." [Ref.7]

4.06 Added to this the evidence of high rates of mutation in food poisoning organisms found in large numbers in farm animals suggests that it is possible to confer antibiotic resistance from a reservoir of pathogenic bacteria in the environment, allowing the bacteria to escape immune surveillance or elude therapeutic intervention. [Ref.8]

4.07 A further problem is that of disposal of effluent waste from intensive animal farming which has changed remarkably in comparatively few years. The Royal Commission on Environmental Pollution's 19th Report considers the growing trend to dispose of sewage sludge, unprocessed food waste and abattoir waste on land, and raises a number of questions. In the light of these concerns current advice to the agricultural industry from MAFF appears inadequate:

> "Where unprocessed waste food or abattoir materials have been spread, farmers are warned that they must not let livestock or poultry get into the fields where this waste has been spread until none of it is left on the ground surface". [Ref.9]

4.08 This advice is a high risk strategy leading to direct or indirect infection of food animals and contamination of plants. Evidence of problems which may occur when intensification of farming is undertaken is given by the example of salmon. Salmon living wild do not experience the problem with lice that often plague farmed salmon. As a result of the problem of lice the Scottish Environment Protection Agency has decided to license Ivermectin, a persistent and toxic chemical previously banned from use in fish farms. Following this decision there have been protests from shellfish farmers, fishermen and environmentalists. John Duffus, Director of the Edinburgh Centre for Toxicology at Heriot–att University has been quoted as saying that Ivermectin fed to salmon or discharged into lochs could find its way into people, possibly reaching toxic levels. "In the worst scenarios, levels might be reached that affect the human embryo in the womb, the human baby through breast milk and the aged,....I have considerable doubts as to the long term safety of the use of Ivermectin in the aquatic environment." [Ref. 10]

5.0 TRANSPORT AND SLAUGHTER OF FOOD ANIMALS

5.01 It has been suggested that the legislation to protect the welfare of live animals in transport is routinely ignored. In a report published in December 1997 the RSPCA points out that under EU Legislation, livestock transporters must abide by a maximum journey time of 8 hours unless they use "approved" vehicles. However, the criteria for these vehicles have yet to be established and until that time, Member States appear to have interpeted this part of the EC Directive on the Welfare of Animals in Transit in different ways.[Ref.11] Mr David Bowles, the RSPCAs European Officer, has been quoted as saying that:

> "Until standards for the approved vehicles are established, journey times will differ from state to state, which can only result in the further suffering of animals."

5.02 The CIEH welcomes the recent statement by animal welfare Minister, Elliot Morley, that the Government is now determined to press the "European Commission to gain agreement for common rules for the standard of vehicles".

5.03 An example of the increased risk to food through animal transport is shown by the transport of chickens to the slaughterhouse, where they are packed in crates and both horizontal and vertical faecal contamination occurs. The problem is exacerbated at the slaughterhouse with the scalding system involved using water as indicated in the following extract from the Report of the Richmond Committee on the Microbiological Safety of Food:

> "Some degree of cross contamination is inherent in the slaughter process however well it is carried out. Some of the reasons why this is particularly true in relation to poultry are:
>
> — the passing of carcasses through low temperatures; and
>
> — scald water;
>
> ....scalding is a heat treatment applied to the carcass to make plucking easier. The water temperature depends to some extent on whether the carcass is to be sold frozen or chilled. High scald temperatures (up to 63°C) can be used for carcasses that are to be water chilled and frozen. However

> a low temperature (around 49°C) is used for carcasses that are to be air chilled and sold fresh because a higher temperature would give the meat an unattractive appearance. Such a temperature is not sufficient to be a bacteriocide. Scalding as presently carried out is not therefore of significance as a control point. Nonetheless reasons of microbiological safety we must recommend that scalding is carried out at the highest temperature that is practicable."[Ref.12]

5.04 Increasingly animal slaughter is concentrated in a small number of large intensive throughput abattoirs. Increasing intensification results in increased cross contamination. It is difficult to identify a way of improving hygiene standards whilst the pressure on the industry remains at its current level for throughput. The Advisory Committee on the Microbiological Safety of Food in its 1996 Report on Poultry Meat identified slaughterhouses as being a factor in contributing to food poisoning and concluded that "Slaughter and processing operations give rise to a very wide range of practices which can have a very serious effect on the spread of microbiological contamination and the microbiological status of birds".

5.05 Similarly, regarding red meat, the Richmond Committee on the Microbiological Safety of Food in their 1991 Report pointed out that the high speeds of a modern slaughterhouse equipment operation can result in an increased microbiological hazard. In addition, other reports have stressed the importance of good abattoir practices in controlling cross contamination of carcasses with pathogens. [Ref.13]

5.06 The CIEH would make the observation that fewer slaughterhouses have inevitably resulted in longer journey times for animals with the resultant consequences.

6.00 HUMAN FOOD CHAIN—RETAIL AND CATERING

6.01 The Chartered Institute recognises the benefits of training to bring about improvements in the safe production of food.

6.02 The Richmond Report on Microbiological Safety of Food Part I states:

> "Microbiological problems usually arise not because of any intentionally unsound practices, but through not appreciating the risks involved in a particular procedure. It is therefore important to establish a positive attitude to product safety that includes a proper training programme for staff.
>
> We strongly support the view of the Richmond Report that Managers and Supervisors must be propertly trained as they need to understand the microbiologically important aspects of the process for which they are responsible. We therefore *recommend* that management should take explicit responsibility for food safety training."

The ACMSF Report on salmonella in Eggs again recommended training of food handers:

> "...we support the introduction of mandatory training of food handlers....". ([Ref.14]

6.03 The Chartered Institute recommends full hazard analysis critical control point (HACCP) as a mandatory requirement for all food retail and catering businesses.

6.04 The Chartered Institute recommends licensing where the person operating the food business is licensed and every food premises is licensed. The Chartered Insititute believes that payments for licensing will help fund enforcement work. Enforcement should be to the standard the public expect and to those standards given in the MAFF/DoH Codes of Practice.

6.05 Precedence for this approach exists in a number of "Environmental Health" areas; eg the Local Government [Miscellaneous Provisions] Act 1976 Section 70 in relation to Hackney Carriage Licensing:

> *". . . a District Council may charge such fees for the grant of vehicle and operators' licences as may be resolved by them from time to time, and as may be sufficient in the aggregate to cover in whole or in part:*
>
> (a) *the reasonable cost of the carrying out by, or on behalf of the District Council of Inspections of Hackney Carriages and Private Hire Vehicles for the purpose of determining whether any such licence should be granted or renewed . . ."*

6.06 An illustration of the self-financing potential can be seen by looking at Birmingham City Council which has approximately 6,000 food premises. If these were licensed for £100 and the person operating the business was charged an annual fee of £100 the annual income to Birmingham City Council would be £1.2 million. Included in that licence would be the requirement that the person is "fit and proper". The standards could be constantly upgraded to take into account changes in legislation, knowledge and practice. Such a system as well as being largely self-financing may also have the effect of removing "unfit" persons from the trade.

6.07 All food business without exception would be required to license. Fees might be waived for charities etc.

6.08 By comparison the current system of registration does not require any compliance with legislation and by its very nature it is always out of date due in part to the rapid turnover of food businesses and the many that do not register.

6.09 The public have a right to expect that their food is produced from "clean" premises. To do this the current legislation needs to be firmly, fairly and vigorously enforced. Whilst this may not affect food poisoning figures, it should ensure that the public see that food is produced from premises that do comply with the law.

6.10 Removal of the licence could replace the current closure procedure as licence removal would ensure immediate cessation of trade. Removal of licence would also be subject to the usual statutory appeals procedure. In addition we would recommend that training must be one of the requirements for the licence conditions.

6.11 Consideration should be given to the availability to the public of information relating to inspections of food premises. Local authorities are often asked about standards at food premises within their districts and are currently unable to provide any information.

6.12 Providing such information would allow market forces to act to improve conditions where proprietors value this information being made available to consumers.

6.13 Another possible system which could be adopted is that similar to the "information from customers" operating currently in Malaysia. A form is fixed in a prominent position within the food business and customers with any complaints are invited to list these. The document has also to be made available to the enforcement officer.

7.00 HUMAN FOOD CHAIN—DOMESTIC-LABELLING

7.01 The lack of food hygiene training in the National Curriculum should be addressed to ensure that basic knowledge and skills are taught. The current requirement in the design and technology in the National Curriculum under the programme of study states:

> *"Pupils should be given opportunities to develop their design and technology capability through: . . . compliant materials and/or food".*

7.02 This requirement hardly constitutes a need to ensure that food hygiene is taught to children through the National Curriculum. Indeed, it fails miserably to address that requirement. The National Association of Teachers of Home Economics and Technology (NATHE) estimate that 15-20 per cent of secondary schools do not teach food technology at all. NATHE hope to have clearer figures in 1998 after they have completed a survey on schools.

7.03 The number of schools currently registered[1] to undertake training to Basic Food Hygiene Certificate Standard is 2,000 in England, Wales and Northern Ireland. To date (January 1992–August 1997), some 106,000 Basic Food Hygiene Certificates have been issued in schools.

7.04 There still appears to be confusion in Colleges/Universities within their syllabus for teaching the principles of food hygiene. Consideration should be given to ensure teachers undertake this subject area and their qualification includes those details required for clear understanding of the principles of food hygiene e.g. to Advance syllabus standard[1].

7.05 The public have a right to expect that. Labelling should be simple, meaningful and clear. The Food Standards Agency must have a remit for labelling to ensure this is consistently applied.

8.00 GENETICALLY MODIFIED ORGANISMS

8.01 The question should be asked; Who gets the advantage from GMOs and is the food cheaper, safer, more nutritious and is this wanted by consumers?

8.02 The Chartered Institute is concerned about the possibility of release of GMOs into the environment. This issue was addressed by the Royal Commission on Environmental Pollution in their 13th Report "The Release of Genetically Engineered Organisms to the Environment July 1989".

8.03 "Current approaches to environmental risk assessment exclude wider dimensions of risk, such as justification, need, benefit, the context of use and public confidence in the trust worthiness of regulatory provision and institutions themselves. Environmental and public interest groups felt that their broader concerns about GMOs lay outside the regulatory framework of risk assessment. These concerns include the implications of GMOs for agricultural strategies (such as pesticide use) and the extent to which GMOs are an appropriate technology or needed at all. Because these concerns have no clear route of expression, the groups in question have feelings of frustration and disempowerment, and their lack of engagement in the issues may give a false impression of lack of interest or concern".[Ref 15]

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[1] The Chartered Institute of Environmental Health through its training arm Chadwick House Group Ltd provides Basic, Intermediate and Advanced Food Hygiene Training through a network of registered courses whose standard of training is regularly monitored to ensure quality.

8.04 Food containing genetically modified ingredients or produced from genetically modified ingredients should be clearly labelled and must be separated for consumer choice. Without this the consumer will not have any choice if clear labelling separation does not occur.

8.05 In addition, the principle of risk avoidance should be considered and applied for protecting the consumer.

8.06 The decision processes surrounding the release of GMOs needs to be changed. The existing framework for assessment of the risk and benefits of GMOs is too narrow to represent the concerns of the public. The adoption of the precautionary principle acknowledges the limitations of science in predicting impacts and should allow for wider social input into decisions about what risks to take. Risk assessment processes should be broadened to link technical, social and ethical issues.

8.07 The ability of bacteria to mutate, at a time when antibiotic resistance is increasing, requires greater safeguards guaranteeing that genetic modifications will not create further resistance. Adequate control must be applied to the development of genetically modified organisms in food.

9.00 CONCLUSION

9.01 The Chartered Institute has in addressing the questions raised by the Agriculture Committee, touched on a number of issues which the Committee may wish to explore further. In providing evidence we have used as many authoritative sources as possible to illustrate the points made. In addition attached to this memorandum are the Chartered Institute's responses to Professor James's Interim Report on the Food Standards Agency (Appendix 1) and Professor Hugh Pennington's Interim Report following the outbreak of *E.coli* food poisoning in Lanarkshire (Appendix 2) which may inform the Committee further on the view of the Chartered Institute, and the issue of the creation of the food standards agency and the wider more fundamental issues of food safety.

9.02 Enclosed at (Appendix 3) is the Chartered Institute's current food policy statement which underpins that current position and stance on many of the issues the Committee are addressing.

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27 October 1997

Examination of Witnesses

MR DAVID STATHAM, Chairman, Food and General Health Committee, Chartered Institute of Environmental Health (CIEH), and Assistant Director Environmental Protection, Leicester City Council, MR IAN COGHILL, Vice-Chairman, CIEH Food and General Health Committee, and Assistant Director, Environmental Services, Birmingham City Council, MR GRAHAM JUKES, Director of Professional Services, CIEH, and MR DOUGLAS BLOOMFIELD, President of CIEH Port Health Centre and Assistant Director of Environmental Services, Suffolk Coastal District Council, examined.

Chairman

466. Mr Statham, can I ask you to introduce yourself and your colleagues?

(*Mr Statham*) Certainly. I am David Statham. I am the Chair of the Chartered Institute of Environmental Health Food and General Health Committee. It principally deals with food but also some other specific public health issues. I also am assistant director of environmental protection with Leicester City Council. To my right is Graham Jukes, who is the director of professional services at the Chartered Institute. He is employed full time by the Chartered Institute and manages that professional service side. Ian Coghill, on my left, is the vice-chair of food and general health and is also assistant director at Birmingham City Council. On my far left is Douglas Bloomfield, assistant director of environmental services at Suffolk Coastal District Council. He is also involved in port health matters. We thought it might be useful in case there were any things relating to ports raised during the discussion.

467. There will be. Thank you for your memorandum. It was extremely helpful, setting out some of the factual background to the Institute. Is membership compulsory for EHOs or voluntary?

(*Mr Jukes*) Membership is not compulsory of the Chartered Institute. The Chartered Institute is the professional and educational body for Environmental Health Officers. We are a chartered body and, by the fact that we have a Royal Charter, we have a quality assurance role. Our training is quite detailed. Environmental Health Officers have a four year honours degree programme which is basically a six layered type of programme which deals with holistic skills as well as technical skills. Basically, we are specifically law enforcers, or we manage the law enforcement process to do with environmental health. We estimate that about 95 per cent of qualified Environmental Health Officers are members of the Chartered Institute, of which there are approximately 6,500 in employment, mainly in the local authority sector.

468. What qualifications does an EHO need to practise?

(*Mr Jukes*) An Environmental Health Officer, to be designated, requires the Certificate of Registration of the Environmental Health Officers' Registration Board. That is a body that is made up of the trustees of the Chartered Institute plus representation from the Department of Health to help to oversee the quality of the education and the core curriculum that is developed and used by us.

469. Can we turn perhaps to more pressing subjects of the day? Much as I trust the BBC to be entirely impartial and accurate, I think it would be very helpful, Mr Statham, if one of your colleagues could express in some detail to this Committee what their concerns about the latest food safety issue of beef on the bone are.

(*Mr Statham*) I think I will ask Ian to deal with that. He was the star of Radio 4 this morning.

(*Mr Coghill*) I should say at the outset I was initially asked to go for a minute. I think they intended to have the leader of the Opposition to ask all those questions to, but they were somewhat put out of countenance by that and they asked me his questions instead.

Mr Mitchell

470. I hope you were not harassed by John Humphrey!

(*Mr Coghill*) I will not go into that, if you do not mind! There is obviously a concern about the findings in relation to transmissibility through the ganglia. The Government has clearly decided to act as speedily as it can. Our anxiety is to make sure that, whatever the regulations are, they are enforceable and are enforceable at a reasonable cost. There are several areas which we have concerns about. Any comments that I make have to be predicated by the fact that I still have not got a copy of the regulations; nor have I ever seen one. The pace at which this matter was brought forward has precluded us from having access to it.

Chairman

471. I will give you mine when you leave.

(*Mr Coghill*) That is very kind. What I essentially said today was that I think it would be inappropriate at this stage and very unusual at this stage to be prosecuted for breaking new regulations because normally the courts would expect us to show reasonable cause. If you shot out this morning and started snatching people who were selling bone in beef, you would look ridiculous. We would expect a period for reflection and allowing people to catch up.

472. What length period would that be?

(*Mr Coghill*) It would depend on the effort put into it. I think that is one of the issues. At the moment, we know that approximately £40 million a year is being spent by the Meat Hygiene Service on taking out specified risk material from slaughter houses. There

[**Chairman** *Cont*]

are very few slaughter houses and you have permanent staff there doing a lot of duties; yet it costs that much to do it because we have been told that so much will be saved when that charge is put onto the slaughter houses instead of being tax borne. According to the Ministry of Agriculture, Fisheries and Food, I understand there will be no cost to local authorities looking for this stuff. I do not believe that. I think it is a fact. If you look at Birmingham, for instance, we have over 6,000 food premises. A lot of those are butchers and a lot of others are likely to be also affected. Those premises will need to be looked at. We will need to educate people; we will need to advise; we may need to take enforcement action. To say that there is no cost is not very plausible. Equally, the initial intention was that the public would protect themselves and assist us by complaining about people selling bone in beef. Present indications are that it is rather the other way round. Another practical matter is actually ageing the stuff. I understand from conversations I have had that there are certain assumptions being made so that the burden of proof will be on the people to prove it was less than six months, but clearly if you are anxious to really control something you do not let it out of the controlled environment in the first place. If it is really a risk and if you are really trying to control it, then you would do it in slaughter houses or in a licensed cutting plant, where you have permanent staff present. In a typical butcher's shop, one of my staff might be there for an hour once or twice a year. It would be quite difficult to check whether somebody is flogging bone in beef in those circumstances.

Mr Mitchell: Illicitly, in brown paper parcels!

Chairman

473. There are at least five concerns you have expressed. I think a sixth you mentioned on the radio was the import of bone.

(*Mr Coghill*) I have to keep repeating this. This is based on our position last night. We are quite good at identifying meat products, but I cannot tell the difference between a French charolais bone and an English charolais bone.

474. It is not like Brighton rock?

(*Mr Coghill*) Unfortunately not.

475. The timescale is of particular interest. What you seem to be saying is that anyone who buys rib of beef from the butcher before Christmas is unlikely to get their butcher into legal difficulties.

(*Mr Statham*) I do not think we are quite saying that. What we were saying was that we will be as helpful and as careful with these regulations as possible. Clearly, we cannot enforce them until we have got them. In that situation, we would also wish to be in a position to see whether or not someone was blatantly saying, "I am going to totally ignore these regulations regardless of what you say", or whether it was a mistake and they were not quite aware of what they could do and what they could not do. In the latter case, our normal reaction would be to explain to people, "Well, you have made a mistake here but let us not make that mistake again and, by doing this, this and this, you can avoid it". If the situation is total confrontation and people are saying, "We are going to break the law", then we would have no option other than to enforce the law, should we be able to do it. Of course, in that sort of situation, we have to prove a sale has taken place and that was one of the other concerns that we had. In normal situations involving sale, if you have something on display for sale, then that is sufficient, but in this situation, as far as I understand it—and again I am talking here without having seen the regulations—the offence will be only to sell rather than to have even on the meat counter on display. In that situation, it is fairly unlikely that the butcher is going to sell it to one of my inspectors, unless they really blatantly do want to test the law. It becomes very difficult to actually find that offence, unless you are putting a lot of resources in, perhaps with test purchasing, which quite honestly most local authorities would not have the resources to be able to do.

476. You are correct, as I read it. It says, "No person shall sell any bone in beef to the ultimate consumer". If I go in and buy for a friend, do you think I would be in breach of the law then?

(*Mr Statham*) I think we would have to test it through the courts. I think you probably would, but you would not be if you were a caterer, of course, because caterers will be able to purchase it providing they then do not sell it on to the ultimate consumer without taking the bones out.

(*Mr Coghill*) If I could just expand on that point, it is perfectly normal for us to get guidance from Government on the means by which we enforce the legislation. The food hygiene legislation has lots of codes of practice associated with it, and we would hope that there would be some extra guidance coming with this.

477. Also, of course, if I want to buy bones for my dog, I am allowed to do that still, but if I use them at home for some other purpose that would not be a breach of the rules, so far as I see them. It says, "No person shall sell any bone in beef to the ultimate consumer for human consumption". I can buy them for my dog; my dog can get the diseases but people cannot.

(*Mr Statham*) There may be a contradiction later on because I think these are being treated not as specified bovine material but as proscribed material and I am not sure whether that is allowed to be sold or not. We would have to refer to the other legislation that relates to that.

478. The Animal Byproducts Order 1992?

(*Mr Statham*) That is the one, yes. As long as it complies with both, I think that would be okay.

Mr Todd

479. Can I ask one thing about the process? My impression is that your organisation has not been consulted at all over the drawing up of these regulations.

(*Mr Statham*) That is not strictly correct. What we received last Monday was an indication of the sorts of things that would be going into the regulations, with a response period for this last Friday. We did actually produce a response within that very short

[**Mr Todd** *Cont*]
timescale, which basically flagged up these concerns. The reason we have been a little bit cautious is obviously we do not know whether those concerns have been addressed in the regulations, but from what has been said to us it would seem that at least some of them have not been. Our main concern was that, once you allow the bones out of the controlled environment, it becomes very difficult to control. If we said that butchers could only buy beef that had been boned out either at the slaughter house or a licensed cutting plant, that would solve the problem.

480. Because the bones would have been removed at that point, where there are already controls in place. Why do you think that particular approach has not been adopted?

(*Mr Statham*) I am not sure. That is certainly what we suggested.

481. If the Government's intent was that these products should not be available to the consumer, that would be one way of ensuring that that did not happen, unless butchers were sourcing the material from somewhere else—for example, imported products which would not come through the British system.

(*Mr Statham*) Since we suggested that the problem was going to be in this definition of sale and that we would either like it to be dealt with that way or alternatively for "sale" to be treated in the same way as it is in other legislation—in other words, to have on display for sale would assume that you intended to sell it—those were the two alternatives. Clearly, the best alternative is to stop it at source, but if you are going to allow it in the butcher's shop maybe it could be allowed because people like to see where the beef has come from or whatever or it is easier to buy a carcass with it all in. I do not know. If you are going to go down that line, then the only reasonable way that could be enforced would be to say it was an offence to have it on display for sale because then if you walked into the butcher's shop and there it was, simple.

482. The butcher, assuming that he is complying with the law, having removed the bones on the premises, how difficult do you think it will be to control the process of ensuring those bones are disposed of in a way which is not for human consumption?

(*Mr Statham*) From experience, it is very difficult to control material that is treated as waste from the food industry. In the past, there has been experience where food waste has been recycled and got back into the food chain in various different ways. One of the reasons that very strict controls were put on the specified material for BSE was because it was essential that that did not get back in the food chain.

483. But bones are not being classified as SBM so you have this rather hybrid arrangement at the moment for bones in that we are supposed to be suspicious of them but they are not actually going to be stained or otherwise marked to show that they may have some risk attached to them.

(*Mr Statham*) Precisely.

Mr Collins

484. Would it be a fair summary of the picture so far to say that you, as the representative of the people who have got to enforce these regulations, have not been adequately consulted about the content of them, would not have had a copy of them if you were not appearing before this Select Committee to day and yet were supposed to be enforcing them from midnight last night? Is this not a complete shambles on MAFF's part?

(*Mr Jukes*) We were in fact contacted yesterday afternoon by officials of MAFF who wanted to put the regulations on our intranet, which is our environmental health office's internal system. We were advised prior to that that we would be used as that route. In fact, we only got a copy of those this morning, which are now actually going on to our electronic information system. In answer to your question, yes, it would have helped considerably if we had been advised that we were going to be used as a vehicle for the transmission of the regulations to other local authorities who are connected. Also, it would have been helpful to know what the timescales were in terms of the way in which we are expected to enforce the regulations.

485. Given the lack of notice that you have been given, were you surprised when the Minister told television audiences on Sunday that he had been aware, in general terms, of the likely outcome of SEAC for some weeks and had been in discussion with his colleagues well in advance of the publication of the SEAC report? Do you not think at that stage he might have bothered to consult you?

(*Mr Jukes*) It would have been helpful.

486. So you are really not very happy. This is not exactly a model of how a government department should operate in this very sensitive area, is it?

(*Mr Jukes*) In all areas of environmental health, I think it is important that Government and those who are having to enforce the regulations and legislation are in very close working dialogue as soon as the issue is raised. We would normally expect that through consultation papers and our responses and our relationship with individual civil servants. We understand and we appreciate that there are situations which arise which are urgent, which need to be dealt with rapidly, and announcements have to be made. Clearly, we would not possibly be on the top of the priority list for information, but I would have expected to be somewhere middle down the chain and to be advised as soon as possible.

Mr George

487. Can I be clear that you say that you were consulted prior to the drawing up of the regulations and Statutory Instrument. Were you consulted prior to the meeting that took place on the evening of 2 December when the decision was taken? Were you consulted about the SEAC report and its likely implications?

(*Mr Statham*) No, we were not. The first that we received was a fax a week last Monday, which would have been about the 7th or the 8th, when we received this draft document with a proviso that we send in a response by Friday last. We actually got that

[**Mr George** *Cont*]

response in I think by Thursday, flagging up our concerns, but with the regulations coming into force today the likelihood of them being able to be amended significantly following that close of play Friday deadline was fairly remote, I would have thought; not impossible, but fairly remote, certainly, for the regulations then to be distributed to everyone. I should point out that, whilst the EH net system covers something like 300 local authorities, it does not cover all local authorities, so presumably some of the local authorities will get the regulations through the post, by fax or whatever. There will be a number of local authorities who have not yet got the information, even though they are supposed to be enforcing the regulations.

488. Can I ask your professional advice? As experienced Environmental Health Officers, no doubt you have seen the SEAC report. Can you comment on or advise, given the range of work which you undertake, where you would place this in your priorities of action? How serious do you see this in terms of your own priorities within each of your own local authorities?

(*Mr Statham*) I think the easiest way to turn that round is to say, as Ian has already explained, we have a workload that means that, even on the basis of the Government's recommended inspection rates, we probably inspect butchers' shops at a maximum of twice a year. We have not resources to inspect them more frequently than that. Since the indications are that these regulations suggest there is no further resource implication, one can only assume that they would only need to be inspected in order to check compliance at that frequency. The presumption would therefore be that the importance is neither more or less great than any of the other risks associated with those sorts of food premises. They would be picked up presumably as part of normal inspections. We would not have the resource, unless we were to take it from elsewhere, to do specific enforcement action in relation to this type of regulation. Clearly, we have not had time to discuss whether or not we would take resources from elsewhere, but I think it is highly unlikely because the other areas are equally important.

489. Will the Chartered Institute therefore be expressing its concerns to MAFF, given the fact that you will not have additional resources and the statement made this morning from this Committee? It will be sending out a rather unhelpful message that inspection will be at a very low level and they need to be concerned about it.

(*Mr Statham*) I think the Chartered Institute would particularly welcome the opportunity to meet with colleagues so we could discuss the difficulties round the table. Then maybe it would be possible for us to look at ways of amending the regulations to make them more enforceable. That would, from my point of view, be the constructive way forward: to discuss the concerns, come to an agreement round the table and then perhaps put forward an amendment. It is unfortunate to have to amend regulations so quickly, but hopefully that may be a possibility.

Chairman

490. Have you had any precedent for this before? Have you had similar difficulties in the past with other regulations?

(*Mr Statham*) Sadly, we have. The one that I recall the most was when the original Specified Bovine Offal Order was introduced for BSE. Then the order arrived in local authority hands something like two weeks after the regulations came into force. I recall having a discussion with the slaughter house manager in my area in those days. We were actually discussing the content from an article in the Telegraph because that was the closest that we got to the actual detail of what these offals were going to be. I think it only normally happens when the situation is seen as being one of urgency.

491. That is the nature of food safety issues, very often.

(*Mr Statham*) I am afraid it is, but it is not really for me to comment as to whether it is feasible to do it. We are probably more electronically orientated these days with electronic mail and maybe we can get things a bit quicker than we could in those days.

Ms Keeble

492. On the timetable, you said you got the draft regulations a week yesterday. Is that right?

(*Mr Statham*) It was not actually in regulation form but it was what was going to go into the regulations.

493. That was within days of the Minister making the announcement, was it not?

(*Mr Statham*) Yes. As I recall, the Minister's announcement was about the same time.

Chairman

494. You got a free text letter rather than draft regulations?

(*Mr Statham*) Yes. It was not draft regulations but it did say what was going to go in them. Probably the easiest thing is for us to provide you with a copy of what we had.

Ms Keeble

495. That set out the main points that were going to be considered and it asked you for comments by Friday?

(*Mr Statham*) Indeed.

496. Which was a reasonable space of time to consider, was it not?

(*Mr Statham*) We have had longer consultation periods but, yes, we were able to respond and we did respond. Obviously, the concern was that it also had arisen that the regulations were going to be coming into force today. We did not know whether there would be time for our comments to be taken into consideration.

497. We had the announcement, as I recall it, either a week yesterday or during the weekend. You had the main principles of the regulations sent to you on

[Ms Keeble *Cont*]

Monday for comment, by the latest, on Friday. You had an indication it was an urgent issue. You then had it put on the Internet on Monday?

(*Mr Statham*) No. We received it this morning to put it out on the Internet today.

(*Mr Jukes*) It has gone out electronically this morning.

498. It seems to me, given the pace at which this has had to move, you had the consultation; you had some warning about what it might contain; you had the details sent to you on the Internet. Can you say where you think the Department or the Minister could have speeded up the process? At which point would you have been satisfied for those to have been taken out?

(*Mr Statham*) To be fair, it is whether or not consultation is really consultation or it is just information. From my point of view, I and colleagues would have been prepared to respond very rapidly to a meeting if that was a better way than trying to deal with this by correspondence. We could have had a meeting last week when we could have expressed concerns face to face and hopefully that could have given an opportunity to have produced that, at least in our view, would have been enforceable.

499. But you had the heads of what was going to be in the regulations a week ago for comment by Friday, knowing it was urgent. Did you ask for a meeting?

(*Mr Statham*) No, we did not. We were only one of a whole list of consultees, a huge range of consultees.

500. But you have been vocal in criticism this morning. You could have asked for a meeting.

(*Mr Statham*) We could have done, yes.

501. Given that you were going to be in the front line of enforcing this.

(*Mr Statham*) I am trying hopefully to be constructive. From our point of view, we will enforce any legislation that we are given to enforce, but it does help though if there is a discussion around that to produce legislation that, in our humble opinion, is enforceable. I do not think that has taken place. That is not trying to criticise any government department. All I am saying is we want to be constructive, to produce a situation that will ensure that we do what the Government wants.

502. You set out the timetable and I have asked if there is any place where it could have been tightened up to give you more time. You said you would have liked a meeting but you have not asked for one. If the Minister does not know that, they have probably got to proceed on what is a very urgent matter. I want to come to another area and that is resources. You said that you inspect butchers' shops about twice a year. Your colleague, Mr Coghill, said that you could not have somebody standing in a butcher's shop all the time to watch what was going on. The restrictions on resources presumably apply to every single area of food inspection for which you are responsible. It is not just this one, is it?

(*Mr Statham*) No, precisely. What I actually said was that, on the basis that there are not any additional resources, one assumes that this is no greater or lesser a priority than any of the other food safety issues that we deal with. I think that is a perfectly reasonable assumption to make. If we were being told, for instance, "We want you to be in these butchers' shops once a week" then clearly as a manager of the service I would have to work out how I was going to do that and that would mean I would have to stop doing something else.

503. The criticism of resources in relation to this particular regulation is no different from the criticism of resources in terms of every other regulation you have to apply, is it?

(*Mr Statham*) I would not agree with the word "criticism". I have not criticised the lack of resources. What I have actually said is the fact that no additional resources have been put forward indicates the priority for these regulations which, yes, are quite the same as all the other risks that are in the food industry. Hence we will deal with it in that way. It would have been the other way round if someone had said, "We want you to deal with it once a week". Presumably that would have had resources linked to it and we would have said, "Yes, thank you very much. We will do it in the way that you insist". I am not criticising the lack of resources; I am just taking the fact that, because resources have not been allocated, that must mean that that is the same sort of priority that this should be given.

504. Presumably new regulations do come out from time to time. When new regulations come out, they take a certain amount of extra attention so that everybody becomes used to them and becomes familiar with how to operate them. After a while, they settle down and become part of routine investigations and spot checks, do they not? Is that not what normally happens?

(*Mr Statham*) Yes. I am sure what you say is perfectly correct. It is very difficult to generalise because no two sets of regulations are exactly the same. The type of regulation that we have here is extending the previous BSE controls beyond the slaughter house and into the butcher's shop so it does make it a slightly different situation. In general terms, what you say is perfectly correct. That would be the way that we would intend to deal with these particular regulations, I am sure.

Chairman

505. Would you expect your normal practice to have the actual draft regulation, to be consulted on the actual words and the legality of the regulation itself? That is what you would prefer?

(*Mr Statham*) That would obviously be what we would prefer, yes.

Ms Jones

506. Could you explain the role and powers of EHOs in relation to food inspection and enforcement? How often, for instance, can food and catering premises expect to be subject to inspections? What proportion of such visits would be the result of complaints and identifiable food poisoning incidents?

(*Mr Statham*) It is in two parts. My Environmental Health Officers inspect premises on the basis of what is laid down within statutory codes of practice over frequency for inspection. One of the very useful

[**Ms Jones** *Cont*]
things that came out of the Food Safety Act was that there was a number of statutory codes which help us to interpret the way in which we enforce the legislation. One of those codes which has recently been amended lays down the frequency with which premises should be inspected. It is a relatively straightforward process. We put that onto a computer programme; it generates the premises that need to be inspected and my inspectors inspect them at that sort of frequency. To give you some sort of idea, the highest risk premises would be inspected around twice a year; the next one about once every nine months and then the next risk about once a year. Then it goes down to the very, very lowest risk premises which I think are something like once every five years, so low risk that they are very infrequently done. We have powers to enter premises at any reasonable time. We have powers to take a whole range of different types of enforcement action and that enforcement action will normally range from premises which are extremely good and where everything is okay to an oral comment that the premises are fine, backed up with an inspection report just to say that the premises have been inspected, to, at the other end, power to emergency close premises. We can close the whole premise or certain practices that are going on within the premise at an emergency level and get that confirmed in the magistrates' court within three days for the thing to maintain. We have wide ranging powers. As far as the proportion of inspections that are results of complaints of food poisoning, as opposed to the routine inspections, I would suggest that the food poisoning inspections are probably less than five per cent—probably even less than one per cent—of the actual premises concerned. Ian has some figures for Birmingham, as to what the situation is there, which may be helpful to you.

(*Mr Coghill*) To give you the figures for last year, we carried out 3,601 programme inspections, which are the sort David has been referring to, and we counted out about 50 in relation to food poisoning outbreaks.

507. You say there are 6,000 premises?

(*Mr Coghill*) Yes. Some of those premises are not inspected every year. They might be every two or three years. That number was 100 per cent inspection against the risk assessment.

508. How many of those visits resulted in a prosecution?

(*Mr Coghill*) A relatively small number. In an average year, we would probably these days close about 12 to 15 and prosecute possibly 30 or 40.

509. Is that increasing or decreasing?

(*Mr Coghill*) In Birmingham in the late eighties, we began a process of very firm law enforcement. For two years, we had very high levels of closures, over 100 per annum. Since then, that emergency action has declined quite rapidly and it has levelled out at round about 12 to 20 per annum. That is the tip of an iceberg obviously because they are the worst premises, but you can actually calculate the size of an iceberg by its tip so we think that shows the real position.

510. You talked earlier about high risk premises. How do you define those? Are they in specific categories?

(*Mr Statham*) They are defined by the type of food that is handled and also the management of the premises at the time of the recent inspection, and the standards that applied at the time of the last inspection. There is a grid with a scoring system. If, say, raw and cooked food are handled on the same premises, for instance, that would clearly be a high risk factor, as opposed to, say, somewhere that just sold wrapped sweets. That would be a very low risk factor. Those sorts of factors are on the computer together to give a score. The score then determines the frequency of inspection.

511. We have established, have we not, that a butcher's premises are likely to be visited about twice a year?

(*Mr Statham*) That is an interesting one. It has just changed. The new code of practice has been amended to increase the frequency of inspection for butchers' shops that handle raw and cooked food. That was as a result of the Pennington report into the Lanarkshire E. coli. It was one of the recommendations that they be increased in frequency.

512. The implications of what we have been discussing today would clearly lead to a further increase in the frequency of visits, would it?

(*Mr Statham*) It may do on the basis of what was being suggested by the colleague further down the table in that initially we may need to visit some premises to advise them of what the regulations are about, but it will not generate any further inspections after that initial explanation.

513. Can I move on and just ask you what role you might play in providing training and information for food handling businesses?

(*Mr Jukes*) Part of the Chartered Institute's mechanism to ensure that food training is delivered is through our company. We have a trading company called Charin Group Limited and we have a series of modular programmes for the general public and for the trade. Just to give you a flavour of the sorts of throughput, to date our network of trainers has trained 4.5 million people in basic food hygiene. We have trained somewhere in the region of 39,000 in intermediate food hygiene and, at an advanced level, somewhere in the region of about 22,000. In addition to that, we provide an options type of programme so that people who are just dealing with small parts of the food handling process can actually home in on specific areas. There are 12 modules which people can then pick off. They are at a fairly basic level but we feel that, in promoting training, we are actually hitting one of the key objectives of the Chartered Institute, which is to make people aware about the need for adequate food hygiene, adequate processes in terms of the food chain and how food is produced.

514. Is it your view that anybody involved in the handling of food should have some minimum training?

(*Mr Jukes*) Yes.

515. Is it your view that that should be a compulsory requirement?

[**Ms Jones** *Cont*]

(*Mr Jukes*) Irrespective of perhaps our vested interest, our position is that we believe every food handler should be trained at least to a basic level. We think that is an essential missing component of the current system within the UK.

516. You mentioned some figures. Is there a percentage that you could indicate to us of people who have at least a minimum upwards standard or who have had some level of training?

(*Mr Jukes*) We have trained over 4.5 million. If you take into account the various other elements, we are probably talking about six million people in this country who have been trained. Because it is a transient employment generally, you cannot say that that is a static part of the employment market, but certainly I would say about six million people have been trained. Some of those of course are school children and people who are leaving schools and colleges.

517. That still does not mean very much to me. Do you have a rough percentage?

(*Mr Statham*) I think it is fair to say that the picture varies greatly across the different types of companies. Some companies are extremely responsible and make sure everybody has trained to a basic level before they start. Other companies deal with their training with more informal methods. It would tend to be more the small and medium enterprises that did not go in for formal training quite so much, but certainly from experience I would suggest that those who have had formal training in the food industry probably only represent something like about 25 per cent. It is a guess but it is probably a fairly accurate one.

518. One of the conclusions of the Commission on environmental health was the following: "The role of environmental health professionals has been mainly confined to securing compliance with hygiene standards; they have been largely excluded from management of the food chain". What management responsibilities should be accorded to EHOs and how far up and down the food chain should they be extended?

(*Mr Jukes*) Can I explain what the Environment Health Commission was? It was set up to review environmental health generally. We had 12 independent experts who sat on the Commission and they produced their report in June this year, out of which you were quoting. The context in which they were making those comments was not about Environmental Health Officers; it was about environmental health professionals. One would take that to mean the much wider group of people who work within the whole of the environmental health sphere, not just Environmental Health Officers, but trading standards officers, public analysts and others who actually work with us to carry out these functions. The concern of the Commission was about ensuring that we actually took a new approach, almost plough to plate—a hackneyed term just recently, but that was the way in which they were considering the issue. Food production, food standards, should actually start at the point of production and end when it actually ends on the consumer's plate. What was being called for was the expertise that many environmental health professionals have in informing that process. Part of the report mentioned and gave examples of the Swedish scenario where they were trying to eliminate salmonella in eggs in the breeding flocks in the fifties and sixties. They started at the basic husbandry of the poultry and moved through the whole food chain, slaughtering many of the animals, but also having a view as to how they could eliminate this particular problem. Many of our leading companies adopt a similar sort of approach. If one looks at Marks & Spencer, for example, they will actually go to the producers and see how the food chain is tracked all the way through from plough to plate. It was that that the Commission was getting at. We would endorse as a profession the fact that one needs to have a holistic overview. You cannot just look at food processing in one way; you cannot just look at animal husbandry. The whole thing has to be knitted together and really that was the point that we would endorse.

519. Would you say that previously there has been an element of lack of coordination in relation to professionals involved in the food industry and the sharing of information?

(*Mr Jukes*) Yes. I think the issue really is about making sure that you see the wider picture and I am not sure that everyone can see the wider picture. One needs to work together in partnerships in terms of pulling the strands together of any particular policy. While it is a fairly new science, environmental health impact assessment, which is receiving a lot of attention by the World Health Organisation and other organisations such as the BMA, will act as a very useful tool in looking at the whole of the food chain. Certainly I would want to see that stressed in the future, as to looking at an overview picture.

Ms Keeble

520. You have responsibility for food inspections in hotels and catering, including fast food, and, since the dropping of Crown immunity, in hospitals as well, have you?

(*Mr Statham*) Yes.

521. With the exception of private family catering like family weddings and so on, those are the areas that have the highest reported incidence of food poisoning, are they not?

(*Mr Statham*) Certainly catering is usually associated with the highest reported incidence. I have to say "reported incidence" because it is often only when a number of people from different family groupings have consumed food that we actually see it as an incident. It may well be that very often there can be other problems that arise elsewhere but, unless you have anything to associate you with other people, then it is difficult to determine that that is an outbreak. It is often seen as just an incident within the family.

522. But based on all the official statistics, the area that you inspect is the one also that has the highest reported incidence of food poisoning.

(*Mr Statham*) We inspect retail as well. We inspect caterers but we inspect all the others as well.

[Ms Keeble *Cont***]**

523. Why do you think it has not been possible, given that that is your profession's particular responsibility, to really deal in a more substantial way with the level of food poisoning?

(*Mr Statham*) I think you have to first determine why there is foodborne disease. Foodborne disease occurs not because of the fact that there is a tile missing on the wall or the inspection processes have not been carried out. Foodborne disease occurs because people do things that they should not do. It occurs out of ignorance normally because people handle the food improperly, cook it improperly, store it improperly. From that point of view, actual inspections that detect practices going wrong are a lot more difficult than dealing with the symptoms, as it were, or the premises. One reason that we have foodborne disease is that people are still not educated properly as to how to prevent it. Another reason why we have foodborne disease is that we bring contaminated food into our catering establishments, into our retail establishments, into our homes, because we have contaminated meat, vegetables and everything else.

524. I am not asking why we have foodborne disease because we have already had quite a lot of explanation about that. What I am asking you is why you have not been able to deal with it more substantially, given that you must be virtually unique as being one profession whose entire remit is to deal with this specific area of the food chain.

(*Mr Coghill*) Can I deal with that point first? That is far from the case. I manage environmental services offices and they do health safety, food, noise, atmospheric pollution, barking dogs, blocked drains, rats, so there is a whole raft of activities which impact on human beings which we have to deal with. That is our professional remit. We have a relatively small number of specialists and we have quite a large number of generalists. We manage to do the inspections but what we do primarily is enforce the law Parliament passes. That will affect to an extent the premises the food is produced in and somewhat the behaviour of the people in there. You can cause a food poisoning outbreak by picking your nose. My officers are there twice a year and there is plenty of time to pick your nose between the time they are there and the next time they visit, so it is about human behaviour in part, and there are very real limits to the amount of impact we can have on human behaviour. We have had cases where people have intentionally, for instance, in one instance, taken a piece of human excrement and put it in a root beer dispenser to get their own back on the management. There is nothing we can do to stop people doing that. We can make it unpleasant for them when they are caught doing it, but we cannot stop them, in addition to which a lot of the problems associated with the growth of food poisoning are probably not within the power of law enforcement to control. One of the issues is that we all want convenience foods. We all want somebody else to produce our food for us. When I was a lad, my mother and my grandmother cooked all the food from primary products. It is a deeply safe way to do it. It is very difficult to make meat dangerous if you cook it. If you get somebody else to cook it, stick it in a vacuum pack, partly reheat it in a microwave and give it to somebody that has nothing to do with it, then you may well become ill. There are all sorts of things we cannot control. We will do our best to enforce the laws you pass but do not expect that to make everybody healthy because it will not.

Mr Mitchell

525. I was just sitting here picking my nose quietly, not wanting to interrupt this internecine war between elected councillors and Environmental Health Officers which we have restaged this morning, to a degree! Can I move on to the Food Standards Agency? You say there is evidence in response to Professor James's report that supports his proposal that the Food Standards Agency should monitor and audit and coordinate local authorities but basically the job should be left to local authorities. Is this just a question of jobs for the lads, keeping things as they are?

(*Mr Coghill*) No, certainly not. I think it is an issue of practice and scale. If we look at a similar thing, the Environment Agency, we used to enforce a duty of care provision on businesses so that when one of our officers was going round they would ask people to demonstrate who takes away their trade waste. They did not make a special visit for that. They went there to do a food hygiene inspection or a health and safety inspection or whatever and it is a matter of learning, to take your colleague's view. It does not take a lot of time to do that and we may well be able to deal with bone in beef in that way.

526. The Meat Hygiene Service has taken over the inspection of abattoirs from local authorities and that seems to be working well.

(*Mr Coghill*) The Environment Agency now has that power but the Environment Agency is not interested, because it is not constructed that way particularly, to take an interest in where shops get rid of their rubbish, so nobody is asking the question any more. It is still going out, so it is going out in the streets and not being taken away. The Meat Hygiene Service works perfectly well for a few hundred premises, as far as we know, but we do not go in there any more so we do not know what it is like. We do know that they are spending £40 million on stopping specified bovine material coming out. That is dealing with one type of process in a place that does not move which has got to be licensed and where the powers of LGA officers are hugely greater than anything we have got. In Birmingham we have got 6,000 premises. It is very, very unlikely that any centralised agency will resource that activity to that level.

527. On the other hand, there is variable performance between local authorities, is there not?

(*Mr Coghill*) I am not entirely sure that that is demonstrated to any great degree. There has been a lot of talk about inconsistency but then we are policing an inconsistent activity. Some of those inconsistencies are more apparent than others.

528. But we have had complaints about the variability of inspecting of food premises, for instance, and investigating outbreaks of food poisoning, performance is variable.

(*Mr Coghill*) Anything that is done by human beings is variable. As far as investigating food poisoning outbreaks are concerned there are

[Mr Mitchell *Cont*]

national protocols and there are local protocols that are agreed nationally. In so far as it is possible you try and use those protocols. It is absolutely vital, however, that you are able to move outside them if it is necessary. It is quite wrong to think that things would be better if everybody operated within a protocol straitjacket. Food poisoning is not an exact science, it is nothing like a lot of things that appear on television. Most food poisoning outbreaks are not traced to a single source or traced to a single meal. Our priority when we get the food poisoning outbreak is to stop it. Somebody else's priority might be to have an interesting research paper at the end of it and explain exactly where it came from. Our action in stopping it may prevent that happen. If people are dissatisfied with that, that is our priority.

529. Is there any evidence of local authorities failing to devote the necessary resources to food safety functions?

(*Mr Coghill*) I can only speak in terms of Birmingham and certainly in Birmingham we have defended the budget for food safety throughout the last several years and the money which the Government is now making available it looks very much as though we will be getting that.

530. Given that local authorities are all in a desperate financial situation, it would surely be better for spending on this area to be done by a national body and co-ordinated nationally so you eliminate the different performance levels and you have a consistency policy across the whole country?

(*Mr Coghill*) There is no evidence that a national body has more consistent performance levels. The police have different enforcement systems within the same operational area. We do not know whether the Meat Hygiene Service is operating uniformly because it is not monitored by us any more. What we do know is the food industry is a hugely variable and varying thing and it occasionally complains that a person in one place wants them to do something different from a person in another place. That may be the case, but unless you look into the detail of it you do not know whether it is correct or not. We feel very strongly that locally based enforcement is the best way to do it.

531. Okay. Can I just move on to Mr Bloomfield because he is from the Port Health Authority and he has escaped his share of persecution this morning. We have a problem about veterinary inspection of fish on Grimsby market. Fish merchants are coming to me and saying that the new charging system that is going to come into force is going to actually impose an almost bankrupting burden. The charges which are now about £40 for one specific merchant, and they have had it audited, will cost about £3,000. How on earth can this be accepted?

(*Mr Bloomfield*) That is because on 1 January 1998 the standard charging regime for the Products of Animal Origin Programme that operates throughout the European Union will come into effect in this country. I understand it is being brought in on that date because the UK face infraction proceedings in the European Court if they do not bring the regime in.

532. The merchants told me that the charges are not similar in Europe, that they are subsidised by local authorities and that their competitors, and they are all in competition for fish landings, are not facing the same heavy burden of charges.

(*Mr Bloomfield*) I cannot speak for every Member State but I have been to border inspection posts in the Netherlands and certainly there the standard charging regime was in place earlier on this year when I visited.

533. But it is going to be a horrendous burden, is it not, if the charges go from £40 to £3,000 plus?

(*Mr Bloomfield*) If that is the difference—

534. This is on a weekly basis.

(*Mr Bloomfield*) If that is the difference obviously that is a considerable difference. I would not have thought that in most border inspection posts the difference in charges for a third country product being brought in through a border inspection post would have been that great. It may increase.

535. On overland fish?

(*Mr Bloomfield*) On, sorry?

536. Overland fish. Coming in from Scotland, which is not a third country yet.

(*Mr Bloomfield*) No. I cannot understand why that is going to be subject to charge on 1 January. There will be a charging regime coming into effect at a later date for home landings and for landings from other Member States. Currently the charges that are coming in on 1 January next, there will be a standard charge for red meat, fish and fisheries' products from third countries.

537. Can I just ask one final question which is about Russian fish imports. Europe required that Russian freezer trawlers be registered. This was then in the process of translating this decision into law, into Directive form presumably, enlarged into a requirement that they be approved and we, with our usual tendency to gold plate all European decisions, then decided that only fish from registered Russian vessels could be imported. Now since the Russians were very slow to register this meant that only about 17 vessels early on this year were registered and fish was being turned away from all the other unregistered vessels. Is this not a question of port health authorities really becoming too bureaucratic for words and just totally inflexible? It was not on the health issue, it was just a question of registration.

(*Mr Bloomfield*) Port health authorities act on behalf of the UK Government in relation to border inspection posts and the border inspection post is subject to a routine audit by a European Commission Inspector. If we fail to implement something that is in European law at the border inspection post that port at which that activity has taken place could lose its status and obviously the financial implications of that are enormous. The European Commission Inspectors do have the power to remove the border inspection post from the approved list of ports and they have done that in the UK already.

538. My information from the industry is that this was not being enforced anywhere else. If British importers, British food producers, wanted Russian fish they had to import it through Amsterdam, it just meant that it could not come here.

[**Mr Mitchell** *Cont*]

(*Mr Bloomfield*) I am sorry. I know broadly what goes on in the UK but what goes on in the other Member States I am not familiar with. Certainly on the visit that I did earlier on in the year to Rotterdam the border inspection post appeared to be not only carrying out the same levels of checks that would happen in the UK but were staffed to a much, much higher level.

539. We are perhaps more assiduous. Just let me raise with you one last incident which was fish from a Russian vessel, the Andromeda, which was not registered at the time but it has since registered. It arrived in Hull, and this was raised by my colleague Alan Johnson, a Hull merchant, and was turned away from Hull by the port health authority on the ground that the Russian vessel that caught it, was carrying this cargo, was not registered but they indicated that it might be landed in Aberdeen. So the vessel sailed up to Aberdeen where the port health authority then refused to land it but indicated that it might be landed at Stornaway. It then went to Stornaway where they decided not to land it and took it all the way back to Riga. This is the kind of folly surely which demonstrates the need for consistent co-ordinated action by our government taken strictly in line with European action rather than an assiduous enforcement of the rules?

(*Mr Bloomfield*) I cannot imagine that one port health authority would recommend that somebody try another port; I certainly would not. I have a little information on the particular instance that you are talking about. I understand that the vessel actually had two separate parcels of fish from different factory vessels on it and that originally both of those were rejected in Hull, that latterly when it arrived in Aberdeen the cargo off the Andromeda was found to be from an approved fishery factory vessel and was allowed to land and that there was material in the other parcel that appeared not to have been from an approved vessel which was not allowed to land. It now appears that that vessel should have been on the approved list.

540. So it was a bureaucratic cock-up, not a health matter?

(*Mr Bloomfield*) The normal process is that if one has material that comes from an origin that does not appear to be approved, if it was fishery products you would check with the Department of Health.

541. But this is from freezer trawlers.

(*Mr Bloomfield*) The fact that it is a fisheries vessel or a factory vessel or a factory on land that processed it is no different in European law, it is an approved plant whether it floats or whether or not it is built on land.

542. My last question because the Chairman wants to move his cargo on! It is your information that these rules are being enforced, silly as they are, in Europe as well, because it is not mine?

(*Mr Bloomfield*) I am sure you are right that there are inconsistencies but there is a regime in place to ensure that those inconsistencies are ironed out and that is through the European Commission Inspectors.

Mr Mitchell: Thank you.

Chairman: Gentlemen, the quality of your evidence giving, which would have been at home in various magistrates' courts the length and breadth of the land, has inspired this Committee to great loquaciousness for which I apologise. It means that we are short of some of the questions we wanted to ask you. We will pursue those with you in writing. Can I express my very deep gratitude to you for the time you have given us this morning. Thank you.

Supplementary Memorandum submitted by the Chartered Institute of Environmental Health (C83)

1.0 INTRODUCTION

1.01 The Chartered Institute of Environmental Health (CIEH) is pleased to supply supplementary evidence to the Agriculture Committee on the points raised in the letter dated 16 December 1997. The information given follows the sequence of the letter regarding further questions from the Agriculture Committee.

2.0 INTENSIVE FARMING PRACTICES AND FOOD POISONING

2.01 In addition to the evidence submitted in the CIEH Memorandum paras. 4.02 to 4.08, additional evidence that intensive farming practices can lead to increasing food poisoning includes the food poisoning bacteria that are present in the products of the intensive farm.

2.02 The conditions which prevail on intensive farms for example in broiler chicken units, mean animals crowded together in an atmosphere of dust, airborne bacteria and viruses and with the floor, water and food contaminated with excrement. The UK Government's Advisory Committee on the Microbiological Safety of Food stated, "Raw poultry meat is a significant carrier of pathogens, particularly Salmonella and Campylobacter".(Ref. 1) This report found that one in three chilled raw UK produced whole chickens at retail sale was contaminated with Salmonella and an even greater proportion of frozen birds was contaminated.

2.03 Between 1990 and 1995 Salmonella infection was reported in pigs, sheep and cattle and calves in Wales.(Ref. 2)

2.04 The environment in which farm animals are confined can be significantly contaminated. A survey of litter and dust samples from commercial turkey flocks in Canada found salmonella in 86 per cent of flocks.(Ref. 3)

2.05 Between 1981 and 1987 in England and Wales there was a 13-fold increase in the rate of isolation of Salmonella enteritidis from laying hens.(Ref. 4)

2.06 Salmonella infected animals may show few, if any symptoms. The overcrowded and unhygienic conditions of the intensive farm may be the key to the infection of farm animals and the ability for infection to spread between animals.

2.07 The Central Veterinary Laboratory have stated, "Bacterial infections can be spread by the airborne route in farm animals, particularly when reared intensively. For example poor ventilation in poultry houses can cause high concentrations of ammonia to develop and irritate the respiratory tract, predisposing to infection".(Ref. 5)

2.08 Airborne infection of chicks, calves and laying hens with Salmonella bacteria has also been reported.(Ref. 6,7,8)

2.09 Infected laying hens will excrete salmonella bacteria and when laying hens are so closely confined in battery cages, the possibility of cross contamination is very high.

2.10 The fundamentally unhygienic conditions of intensive broiler chicken production have been described by researchers: "Broilers are reared in confined housing and eat, sleep and defecate on the floor or litter inside the house . . . During transportation to the processing plant, some broilers may defecate inside the transport containers . . . When they are processed . . . there is evidence that all the broilers that were inside the transport container will have some faecal material on their feet and breast feathers. The faecal material on the breast also comes from the broiler's practice of resting on their breasts on the floor of the broiler house".(Ref.9)

2.11 Salmonella contamination of poultry houses can be so severe that presssure washing or steam cleaning of the house between the rearing of batches of chickens can lead to an increase in levels of bacteria.(Ref.10)

2.12 In addition to airborne infection and faecal contamination, contaminated feed can also introduce and spread infection. The Advisory Committee on the Microbiological Safety of Food stated, "Animal feed is an important potential vector for the transmission of microbiological infection to poultry flocks".(Ref.11)

2.13 The Advisory Committee on the Microbiological Safety of Food also stated, "We regard animal feed as an important potential vehicle for the transmission of Salmonella infection . . . we firmly believe that it is technologically possible and economically feasible for the feed industry to produce Salmonella free poultry feed".(Ref.12)

2.14 In addition, the Central Veterinary Laboratory have found that nearly half of the broiler flocks examined have been colonised with campylobacter.(Ref.13)

3.0 The Welfare of Animals in Transit

3.01 In addition to the evidence provided in para 5.01 regarding the welfare of animals in transit, Birmingham City Council undertook a rolling programme from 20 March 1989 to 7 November 1997 to examine vehicles with animals in transit.

3.02 This programme examined 307 vehicles of which only 87 were found to comply with legislation. 71.66 per cent of vehicles failed to meet legal requirements.

3.03 Failures which were detected included lack of cleaning and disinfection of vehicles, failure to fit internal partitioning and insufficient headroom for livestock, all of which caused unnecessary suffering and lead to an increased risk of cross contamination. Further discrepancies were noted in relation to essential documentation, in particular the absence of licences which are required for animal movement.

3.04 Over the period 52 people have been prosecuted resulting in fines totalling £44,200. Also 5 formal cautions were issued in respect of offences.

3.05 The statement in our para 5.01 regarding the welfare of animals in transit being routinely ignored is a reference to this country.

4.0 Reduction in the Number of Slaughter Houses

4.01 In addition to the CIEH evidence given in para 5.06, longer journey times inevitably results in increased urine and faecal contamination of the animals.

4.02 The Report of the Committee on the Microbiological Safety of Food 1991 stated "the nature of the slaughter process makes it inevitable that any contamination present in birds or animals will be further spread during processing . . . there is no single stage in the slaughter process which completely eliminates harmful micro organisms".(Ref.14)

4.03 The increasing journey times for animals with subsequent increased hide contamination was recognised in the Pennington Group Report 1996.(Ref.15)

4.04 As there has been no significant reduction in the number of animals that are going to slaughter, then the increased pressure on the relatively small number of remaining slaughter houses has inevitably led to increased line speeds. The Pennington Report points out that; "The speed of the production process within abattoirs needs to be controlled so as to permit the achievement of adequate food safety standards".(ref.15) High line speeds almost inevitably lead to cross contamination from hides or intestinal content.

5.00 Provision of Information to the Public

5.01 The majority of information about food premises following an inspection occurs in letter form. For various reasons, local authorities are reluctant to allow this information into the public domain. Two reasons are defamation and commercial interest and for these reasons and others, public enquiries about standards at food premises are usually not able to be answered by local authorities.

5.02 In addition, local authorities would be unable to disclose information which may be used in legal proceedings against a company.

5.03 Local Authorities can and do provide information with regard to the number and type of notices served, the number of prosecutions, closures and formal cautions issued.

6.00 Catering Premises and Butchers Shops

6.01 There is no clear indication as to the impact of the Pennington recommendation on the physical separation of raw and cooked meats. In some cases butchers and caterers have taken full cognisance of the Pennington requirements whereas in others there appears to have been little change in practices. It is likely that for many, changes in these practices will only flow from increased awareness which comes from improved training of all food handlers and proprietors.

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16 January 1998

Memorandum submitted by the Local Authorities Co-ordinating Body on Food and Trading Standards (LACOTS) and the Local Government Association (LGA) (C19)

SUMMARY

Food Poisoning

The submission draws attention to a number of issues which require further efforts by relevant bodies to resolve. These relate to the validity and use of food poisoning data.

Scientific Understanding

We list a number of uncertainties which need research and applied advice to enforcers. There may be significant benefits in the consolidation of existing research findings into conclusions which enforcement staff can apply to actual food safety practices.

Food Safety Risk

The global nature of the modern food industry, the multitude of different food handling operations taking place and new hazards and risks mean that no stage in the human food chain can abdicate responsibility for implementing hygiene measures.

In the retail sector, consideration should be given to whether the absence of chill control for raw foods is still appropriate. In catering, consideration should be given to arrangements for monitoring catering for large functions. The hazards presented by the use of raw eggs should be addressed, and the legal position should be clarified quickly. For both retail and catering sectors, we see significant food safety benefits in a licensing system to ensure that those who pay insufficient regard to the safety of their product are prevented from opening or from continuing to operate beyond the licence renewal date.

Other Issues

Training of Food Business Staff: Training has an important effect on food safety. LACOTS and the LGA believe the time has come to extend training requirement to food business proprietors and managers, and to be specific about requirements, in particular to require training in hazard analysis.

Enforcement: We commend the local approach to food safety enforcement as a principle, and a number of practical advantages are set out in the paper. Changes in government policy on food safety enforcement in the last few years have caused confusion and uncertainty; the current approach, apparently giving more room for professional enforcement judgement, is welcomed.

Resources: In our view the mechanism for allocating resources for food safety enforcement requires review to ensure that enforcement work is fully accounted for in relation to new or amended legislation.

Food Standards Agency: We strongly believe that there are significant food safety concerns connected with the growing of crops and the rearing of livestock which will only be properly addressed through the inclusion of the farm sector in the remit of the proposed Food Standards Agency.

1. LACOTS

1.1 The Local Authorities Coordinating Body on Food and Trading Standards (LACOTS) provides a representation and coordination service in the fields of trading standards and food safety and hygiene on behalf of the UK local authority Associations, by whom it was created in 1978. LACOTS relies on expert and practical advice from Chief Officers and their senior colleagues responsible for enforcement work in local authorities throughout the UK.

1.2 LACOTS' current workload includes draft guidance to local authorities on legal and enforcement issues relating to contaminated spices, dairy products sampling, *Salmonella* infections in milk, wild game meat processing, hazard analysis in retailers and caterers, food complaints investigations and food poisoning investigations. LACOTS also provides the enforcement view in the development of Industry Guides to Good Hygiene Practice.

1.3 The Local Government Association (LGA) represents the 500 local authorities in England and Wales, providing services for a total of 50 million people. The Association lists the safety and health of local communities alongside prosperity, environmental sustainability and equality of opportunity as its key objectives.

1.4 The comments below are made under the headings listed by the Agriculture Committee and relevant additional headings.

2. RECENT TRENDS IN THE INCIDENCE OF BACTERIAL FOOD POISONING IN THE UK, AND THE EFFECTIVENESS OF THE SYSTEM OF NOTIFYING CASES OF FOOD POISONING

2.1 Some food safety enforcers have concerns about the validity and use of food poisoning data for the following reasons:

- Some GPs appear to report suspect cases of food poisoning at regular intervals, whilst others never report any suspect cases.
- Notifications are usually received several days (and often even longer) after initial diagnosis of illness by the GP, by which stage there are more difficulties in obtaining meaningful outcomes from investigations.
- Conclusions about the general standard of food hygiene are extremely difficult to draw using the currently recorded trends in bacterial food poisoning.
- Some enforcers draw attention to the fact that the UK currently does not have a system for recording confirmed cases of bacterial food poisoning; rather, we have a system for notifying suspect cases. This, it is argued, means people suffering from diarrhoea and vomiting, of which a large number may well be viral and/or non-foodborne, may be included in official statistics.
- It is also argued that, whilst the UK does record isolations of specific food poisoning bacteria such as *Salmonella*, these do not necessarily indicate foodborne illness, as they will include bacteria carried asymptomatically for long periods and non-foodborne salmonellosis.

2.2 The debate on these issues is not resolved. LACOTS has discussed internally and with other bodies possible improvements to the system for notifying and recording cases of food poisoning. The Public Health Laboratory Service (PHLS) is carrying out some research with a view to improving the notification system. LACOTS and the LGA believe that these are important issues which need to be considered, and better mechanisms are needed to enable officials to come to appropriate conclusions and implement any necessary changes.

2.3 There is more agreement on the need for improvements in the extent to which information obtained from outbreaks is used to improve food hygiene practices. There is no nationally agreed and co–ordinated effective communication system for reporting on and disseminating information on food poisoning outbreaks (and cases if appropriate). The exchange of information and liaison between the Communicable Disease Surveillance Centre (CDSC), local authorities, government agencies (such as the Meat Hygiene Service) and the food industry needs better co-ordination, but none of these agencies currently has overall responsibility or authority.

2.4 One important factor currently militating against the operation of a co-ordinated system is the lack of (compatible) information technology links between the relevant bodies.

3. SIGNIFICANT GAPS IN CURRENT SCIENTIFIC UNDERSTANDING OF, AND STATISTICAL INFORMATION ON, FOOD SAFETY ISSUES, AND MEASURES WHICH COULD BE TAKEN TO REDUCE THESE GAPS

3.1 We note and welcome the large amount of food research work currently carried out by government, industry and academic institutions. However, we are concerned that procedures for consolidating research results and conclusions and converting them into practical advice to enforcers on the front line are not at all well developed. There is no government publication either focusing on such work or which has a broad enough coverage of the application or implications of research. Food safety officers need this kind of advice to support their enforcement decision-making both with respect to current pathogens and any which emerge. A small central unit (perhaps within government or the proposed Food Standards Agency) to review all food safety research, from whatever source, including government, and to provide advice to those at grassroots level, including locally-based scientists, would remedy this situation.

3.2 Allied to this there is also a need to introduce a system for reporting on progress with implementing recommendations (which have been accepted by government) made by government advisory committees.

3.3 A number of uncertainties still appear to exist in food safety science which impact on the work of food safety enforcers. These concern: whether cleaning and disinfection chemicals continue to be effective given evidence of greater resistance of pathogens to control agents such as antibiotics; the safe cooling of high protein products in various sectors of the industry; the relative importance of food as a vehicle in the transmission of viral illness; and thawing of foodstuffs, particularly meats, in refrigerators. Research in these areas, together with applied advice for enforcement staff, would clarify some doubts about what should be regarded as safe practice.

4. THE LEVEL OF FOOD SAFETY RISK AT ALL STAGES OF THE HUMAN FOOD CHAIN

On Farm

4.1 Public debate continues as to the relationship of food safety problems to the greater use of new technologies or unnatural practices on the farm. We consider that new technologies and practices should be subject to the greatest possible scrutiny before being approved. Consideration should be given to whether a longer term, precautionary approach should be taken; research and security should always consider if there are any safety or hygiene implications of new technologies and practices, especially relating to bacterial concentrations, new pathogens and potential for contamination.

In Transit

4.2 The Welfare of Animals Order 1997 came into force on 1 July. The controls are regarded as some improvement in animal health and welfare terms, although concerns have been raised about the potential for cross contamination of animals during transport. Due to the nature of the transporting arrangements clean animals on the lower levels of vehicles will inevitably become contaminated by the waste from animals on the upper decks. This would potentially give rise to concerns from a food hygiene perspective.

4.3 Likewise with the Welfare at Markets Order 1990, clean animals brought to market will inevitably become dirty as the day progresses (mud and faeces) and this may give rise to concerns from the food hygiene perspective.

4.4 Although measures have been introduced to ensure animals are "clean" when presented for slaughter, there might be some advantage in further improving, through regulation, cleanliness during transport and at markets.

Retail Sector

4.5 The hazards and risks presented by raw foods for retail sale are perceived to be exacerbated by the absence of legal requirements for chill control of raw foods which are to be cooked (in particular, raw meat). This gap in the chain of food safety controls compromises strict controls at other parts of the food chain if the raw food is sold to the consumer contaminated. Unnecessarily high bacterial loads could be introduced into catering outlets and the home where most food poisoning occurs. Treating retailers differently from wholesale producers of meat, dairy and egg products etc (who do have to chill control their ingredients) has adverse food safety and, therefore, consumer implications.

4.6 The forthcoming publication of the Industry Guide to Good Hygiene Practice for the retail sector is very much welcomed. Whilst the advice it contains is of a high standard, government should consider the production of a more user-friendly document in the short term. The focus of such guides tends to be on enforcers rather than on assisting businesses to comply with legislation. Many smaller retailers will not have the time or inclination to purchase and read the document approved by the Department of Health, whilst they may be prepared to look through a short booklet and use other materials such as a wall chart. It is essential that strategies are effectively monitored and changed when found inappropriate or impractical. In addition, consideration should be given to assisting those retailers whose first language is not English.

4.7 For further comments which are relevant to the retail sector please see under "Retail and Catering Sectors" below.

Catering Industry

4.8 Reported food poisoning cases arising from catering outlets form a significant number of total reported food poisoning cases. Catering for large functions such as weddings, which often includes domestic food preparation, is also the source of a significant number of cases. Whilst advice in government leaflets is welcome, there are at present insufficient resources properly to advise organisers in person and to carry out food safety inspections of such events. Local authorities have concerns about the number of small catering outlets which open and close, and the difficulties of introducing hazard analysis or HACCP systems in this large sector. These are explained under "Retail and Catering Sectors" below. Authorities are also concerned about the use of raw eggs by some caterers in uncooked or lightly cooked dishes and the inclusion of raw eggs in published recipes and on television cookery programmes, in spite of the Chief Medical Officer's advice that "everyone should avoid eating raw eggs . . .". Government advice is needed on whether raw eggs can be regarded as a hazard under the Food Safety (General Food Hygiene) Regulations 1995—and therefore whether their use could be liable to enforcement action where appropriate—and on whether information about the hazards associated with raw eggs should be provided by caterers to customers.

Domestic Households

4.9 The majority of reported food poisoning cases arise from the home. Whilst labelling provides one option to effect controls, total reliance on labelling information is unsatisfactory because food safety advice on labels may not be read or absorbed, and people may believe they already know all about food safety. More rigorous ways of improving public knowledge and awareness are needed. LACOTS and the LGA strongly believe that this process must begin at school. Information makes an impact on children—witness the current trend in the advertising industry to promote an increasing range of non-child-specific consumer products to children in the knowledge that they will influence parents. Information and advice at school can also stay with someone for life. Food hygiene and safety should constitute a small but essential part of the national curriculum.

Genetically Modified Food

4.10 LACOTS' comments relating to "scientific understanding" (Section 2 above) apply here. LACOTS also considers it essential that GMOs are effectively labelled to allow real consumer choice. This is essential where there is scientific uncertainty or disagreement.

Retail and Catering Sectors

4.11 Currently anyone can open a retail or catering food business. The only explicit prior requirement is to register one's intention with the local authority, at no cost, at least 28 days before opening. Whilst this system has brought some but minimal improvements to the arrangements which went before, it does not provide any powers for local authorities to ensure a business will fully comply with hygiene requirements from the day it opens. Where the 28 days' notice is not given and other notification routes such as a planning application are not involved, the authority has little or no opportunity to visit and inspect premises and discuss food safety with the proprietor before the business opens. Prosecuting someone who has not provided 28 days' notice is widely held to be unrealistic, as it is a one-off administrative offence; rather than being relevant to controlling current food safety problems, and there is a view that magistrates do not see such prosecutions as having a significant public interest. Another problem with the registration system is that enforcement action relating to food safety controls can only be taken once the business is actually operating, and then, unless there is an imminent risk to health, the enforcement process can be protracted.

4.12 What would be more appropriate and provide a far more effective method of control is a licensing requirement for all retail and catering businesses, with a system of prior approval before being allowed to open. A system of prior approval operates in the manufacturing, processing and wholesale sectors (under EU product-specific directives) and allows important food safety matters to be addressed before the business opens.

4.13 Such a selective barrier to entering the retail and catering sectors, or conversely an entry ticket system, is essential to ensure that the gradually improving understanding and knowledge of proprietors and managers with respect to food safety being brought about by the introduction of hazard analysis or HACCP systems is not diluted and subjected to unfair competition by the entry of those who have little knowledge about food safety.

4.14 A sensible fee system associated with licensing would provide local authorities with the necessary resources, related directly to the sector at which they are being targeted and to the local situation.

4.15 The Government has accepted the Pennington recommendation that premises handling both raw and cooked meats should be subject to a licensing requirement. LACOTS has submitted to the Secretary of State for Health that the risk assessment logic underlying the recommendations—the potential for contamination of cooked meats through handling raw meats—applies equally to all high risk premises, which includes many caterers. Licensing for butchers and similar businesses should be the first stage in a programme to introduce licensing for at least all high risk food businesses. It is noteworthy that both before and since the outbreak in Lanarkshire, *E. coli* 0157 outbreaks have occurred in other types of premises, particularly residential/nursing homes.

4.16 LACOTS and the LGA believe that licences introduced to implement the Pennington recommendations should be renewable, to give enforcers the power, where necessary in the interests of public health protection, to prevent a business from continuing to operate where it fails to meet requirements under food safety law.

5. OTHER ISSUES

Training of Food Business Staff

5.1 In all sectors of the food industry the general requirement is for food handlers to be trained according to their work responsibilities. This is deficient in two respects:

— the requirement should go beyond food handlers to apply also to food business proprietors and managers, commensurate with their responsibilities. Research, most of it in the United States, has suggested that the attitude and knowledge of those in charge of a food business's operations are crucial factors in determining how well food safety hazards are controlled;

— the current requirement contains no prescriptive elements at all. There should be some detail in the requirement, perhaps covering the minimum level of knowledge required and the need for competence-based, on-the-job training where appropriate or possible. In particular there should be a requirement for staff to be trained in hazard analysis. The US research has suggested the greater effectiveness of such an approach compared to training which is knowledge based and which usually takes place in a classroom setting.

Enforcement

5.2 Responsibility for enforcing food hygiene and safety legislation lies, with the exception of most fresh meat production, with local authorities. LACOTS and the LGA commend the local approach to food safety enforcement as a principle. It allows matters of concern to local people to be addressed. Recent experience in relation to pollution bears this out: the Environment Agency, quite rightly, sees its greatest priority as the larger-scale pollution incidents and issues. Local authorities' experience is that the smaller local incidents do not receive sufficient attention to meet local concerns. Local authorities are also closer and sensitive to local public views, complaints and pressures as well as being in a position to assist local smaller businesses to comply and go beyond minimum compliance to achieve better food safety standards. Their accessibility is a key advantage. Their democratic dimension allows for accountability and the establishment of public trust.

5.3 As ever, there are funding pressures within authorities for all services. We welcome the proposed monitoring and auditing role of the Food Standards Agency in this respect as it will provide a strong basis for funding bids within authorities for food safety work.

5.4 In recent years there has been vacillation in Government policy on enforcement. Backed by the Audit Commission's reports of 1990 and 1991, and food safety concerns identified in the Richmond Committee reports, the directive from government was to make full use of formal enforcement action, such as service of the then new statutory notices and prosecution. Following often unfounded press criticism and to implement the deregulation drive, Government advice and policy then switched a few years later to focusing efforts on an informal, business-friendly approach. Now the pendulum has appeared to move back to the centre, perhaps putting less pressure on local authorities either way. This is welcomed, but it should be appreciated that the changes have caused confusion and uncertainty. Enforcement bodies should have the freedom to decide how best to enforce the minimum standards Parliament has agreed, in conjunction with direction and consensus-building from LACOTS and the LGA, and the Food Standards Agency when it begins work.

Resources

5.5 LACOTS considers that any review of food safety which looks at prevention and enforcement work should take a close look at the mechanism for allocating resources. Many food safety statutory instruments have been introduced in the past five years, the bulk of them implementing European product-specific hygiene directives or BSE controls, for which funding for associated advice and enforcement work does not appear to have been allocated. Consultations on draft statutory instruments always contain a proposed compliance cost assessment for the sector of the industry affected, but there is no public assessment of anticipated enforcement costs, whether it be local authorities or government agencies involved. Whilst some of the additional costs of this new legislation have been relatively small, all add up.

5.6 Allied to this, the proportion of the total RSG allocated for food safety enforcement work is not readily communicated to local authorities, which makes allocation of the funds difficult.

5.7 LACOTS and the LGA consider that this lack of attention to how food safety enforcement is funded should be addressed.

Scope of the Food Standards AGency

5.8 The introduction of a Food Standards Agency is largely in response to public concern over a number of food scares. Some of these originated at the production and farming end of the food chain and it is therefore vital that the new Agency has a role from "plough to plate" as Professor James has so aptly put it. LACOTS and the LGA fully support this concept, as we do the inclusion of nutrition in the remit of the Agency.

13 October 1997

Examination of Witnesses

COUNCILLOR JOHN RYAN, Chair, LGA Public Protection Committee, Vice Chair, LACOTS and Member of Barnsley Metropolitan Borough Council, MR MIKE ASHLEY, Head of Public Protection, LGA, MR DON BOON, Chair, LACOTS Food Strategy Group, and Director of Environmental Health and Trading Standards, London Borough of Croydon, and MR MARK DU VAL, Assistant Chief Executive (Food), LACOTS, examined.

Chairman

543. Gentlemen, I am sorry to keep you waiting but I think you probably understand the reasons for that. Can I ask you, Councillor Ryan, if you could introduce yourself and your team?

(*Cllr Ryan*) Thank you, Mr Chairman. I am Councillor John Ryan from Barnsley MBC. I chair the Local Government Association's Public Protection Committee and I am also Vice Chairman of LACOTS. On my right is Mike Ashley who is the Head of the Public Protection section of the Local Government Association. On my left is Mark Du Val who is Assistant Chief Executive on the food side on LACOTS. On the far left is Don Boon who is a Director of Environmental Health and Trading Standards, the London Borough of Croydon and Chairman of LACOTS Food Strategy Group.

544. Thank you. Could you just explain exactly what LACOTS does in relation to food safety, how important food is in your work and the "F" is missing from your acronym for example?

(*Cllr Ryan*) Yes it is. LACOTS was set up by the previous Associations of Local Authorities in the UK to be a co-ordinating body on food and trading standards[1]. We have a management committee that now comes from the Local Government Association, COSLA and ALANI from Northern Ireland. That is a 12 member management committee to deal with all the normal day to day work of LACOTS. My Committee on Public Protection gives most of the work to that management committee, obviously the biggest organisation. We try as near as possible to do as much work to co-ordinate issues from local authorities on the enforcement of standards particularly, as I say, on the food and trading standards side.

545. Could you just explain briefly your relationship with bodies like the Public Health Laboratory Service, the witnesses we have just heard and the Association of Public Analysts? How do you relate to these bodies?

(*Cllr Ryan*) The Association of Public Analysts and the Chartered Institute of Environmental Health have advisers to the Public Protection Committee but on any items that we have to deal with we write to all the organisations asking for their comments and any recommendations they can put on the issues that we are dealing with so that any decisions that are taken by the members of the committee are obviously taken with as near as possible the full facts from all the organisations.

546. There is no formal consultative arrangement, it is an informal one?

(*Cllr Ryan*) It is laid down from LACOTS. They are the consultees that we always deal with plus any others that we have relevance with at the time.

(*Mr Du Val*) Just to expand on it in terms of the LACOTS' working arrangements with these bodies. We have various groups of advisers that we draw from local authorities. In addition we seek support and we invite professional bodies, like the Chartered Institute of Environmental Health and the Association of Public Analysts, to nominate observers on to those groupings because we want to ensure a close working relationship and obviously prevent duplication and work together. In addition we also invite the Public Health Laboratory Service to do the same. We also, in that context, have mutual relationships in that the Chartered Institute of Environmental Health invites the LACOTS Secretariat to attend their food and general health committee. We see this exchange of information and working together as essential to ensure that whilst we may not necessarily be singing from the same hymn sheet we at least are aware of each others views and are seen to be working together.

547. That is helpful. Before we move on to the main subject of our questioning is there anything you would like to say about the beef on the bone issues you heard us talking to our last witnesses about? I do not want to get bogged down in this unnecessarily but if there are issues that you would like to raise please feel free to do so.

(*Mr Du Val*) I think the only thing I would say is we were in a similar situation in relation to the short timescales. How LACOTS works is we want to provide an authoritative view based on practitioners. We likewise received the document on Monday afternoon and we then faxed it out to advisers in local authorities. These are the practitioners, the chief

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[1] *Note by witness:* "LACOTS was set up in 1978 by the LGA's predecessor local authority Associations in England and Wales, and by the Associations in Scotland (COSLA) and Northern Ireland (ALANI) to be a coordinating body on trading standards, including food standards. Food safety coordination was added to its remit in 1991, but the acronym was left unchanged."

[**Chairman** *Cont*]
officers, the heads of service who are doing the job. They provided comments back to us and we managed to reach the 4pm deadline on the Friday with our comments. We have concerns about enforceability, some of which I think are addressed in the regulations but again we are just studying them now, they came through the fax machine at eight o'clock last night when no-one was in the office to pick them up. Also what we are looking forward to is the promise of guidance in relation to how the regulations will be enforced. I think there is essentially a question as to what government's expectations are on the local authority side because it has made it clear that there is no additional resource that is going to be added but obviously there is the issue of how does that fit in in terms of the broad enforcement approach? We will hope that government departments will be working with us.

548. In the summary of your evidence you said that: "Changes in government policy on food safety enforcement in the last few years have caused confusion and uncertainty; the current approach, apparently giving more room for professional enforcement judgment, is welcomed." Do you still stand by those remarks in the light of what has happened in the last week?

(*Mr Du Val*) I think the difficulty that one is faced with in this situation is that obviously SEAC has given various options to government and government has taken one particular option and we are now, within a very, very short timescale, finding legislation in place. It is important that we are very clear in that what we are saying is we favour working with local businesses, helping businesses through these things and, let us be honest, there is a variety of opinions out in the public domain on this whole issue. There does need to be that flexibility to work with businesses and help them but I think it is also important that government gives a very clear steer as to whether it wants these regulations to bite incredibly quickly? Hopefully we will get that steer from government departments.

549. Do any of my colleagues want to pursue this or I will move on to our main questions? In that case can I ask about the question of local variability of enforcement. You commend to us in your evidence the local approach to food safety enforcement as a principle but we have heard quite a good deal of evidence which suggests that there is a great deal of variability in local enforcement. Do you recognise that as a problem or not?

(*Cllr Ryan*) Obviously, as we said before, there has been variability in enforcement. We as an organisation from the LGA and I know with LACOTS are trying our best to work with the government on that to get co-ordination, to get consistency. I have had the pleasure of serving with Peter Kilfoyle on his access business group which is working on a concordat of good enforcement. We are much in favour of that. If there have been variations in the past we, as an organisation from the Local Government Association, are doing our best to work with the government to make sure that any enforcement, any information that goes out to any businesses, is equal, is a standard remit and that we are all working together.

550. We have particularly met people in the meat trade who are very happy that there is now a more centralised and coherent system of enforcement of standards of abattoirs. We heard evidence just now that that is rather easier because of the small number of abattoirs. Would you endorse that view?

(*Cllr Ryan*) I think that is right, yes. We do not mind any overarching regime to look at it. Anything that does cause a standard enforcement policy is a good thing but also within local authorities they deal with many different ones and it has a bigger remit than what the Meat Hygiene Service has. We want to work to make sure that we get a standard enforcement approach.

(*Mr Boon*) You mentioned, Chair, that the "F" is missing from LACOTS and it is perhaps significant. About five years ago LACOTS had a trading standards remit and not food safety. It was at that time, about five years ago, that food safety was brought into LACOTS because of the issue of consistency, uniformity, co-ordination and there was perceived to be a need for that at that time. I would like to think that after five years of work by all local authorities with our partners in the Chartered Institute and other agencies we have produced a much better system with regard to uniformity and consistency. I think surveys have indicated that. We have actually surveyed trade and we have researched these alleged inconsistencies and generally they do not stand up to scrutiny. We have a whole range of guidance that has been produced in co-operation with our colleagues to ensure some consistency of enforcement.

551. What I do not quite understand is why you attach such importance to the democratic principles which are actually aimed at uniformity around the country. In what sense can you be locally accountable if the standards are the same all around the country?

(*Mr Boon*) Although they are set nationally the interpretation of that legislation is local. We like to think we work in partnership with our local businesses and many local authorities have economic development forums. We are very keen to see the support of local businesses, especially small businesses, and by working with them on the ground locally and very close to them as well we feel this is a great advantage not only for them but also in terms of food safety and protection for the consumer.

Chairman: I think Mr Todd has a question.

Mr Todd

552. Do you support Professor James' proposal that funds should be directly allocated to local authorities for food related work, effectively ring-fenced?

(*Mr Ashley*) We are very uneasy about that particular recommendation within Professor James' Report. It was not a very clear recommendation, it was an issue that he raised about how funding should be undertaken. In general we were very pleased with the James Report and very supportive of the generality of its recommendations but on financing we do believe that money ought to be provided through the normal channels of the revenue support grant.

[**Mr Todd** *Cont*]

Chairman: We are actually going to move on to financing in a little while.

Ms Keeble

553. I wanted to ask a question. You said you are working to get more standardisation between local authorities. Are you developing protocols for your working? How exactly are you getting that standardisation?

(*Mr Boon*) What we do is we identify an issue and a problem, let us call it food hygiene inspections of the premises, and it would clearly be to our advantage to have a standardised format to ensure consistency. We draw then on colleagues across the country representative of all the agencies and all the types of local authorities, set up working groups and then come up with guidance which we then consult on, not only with the local authorities but with the trade, with government agencies, and out of all that comes a formal document that is actually launched and then sent out to local authorities for their guidance on enforcement. Much of that guidance, I should add, has been recognised in statutory codes of practice which indicates that we must have authority.

Chairman

554. You are very strong advocates of licensing for all food premises. Presumably you would agree that consistency is all the more important if you move towards a licensing regime because the power you have would be even greater over these outlets?

(*Mr Boon*) One of the big weaknesses at the moment is the fact that we do not have any powers to prevent businesses opening and, of course, a licence scheme would have a prior approval aspect to it. That would mean that before premises are opened we can ensure that training has been put in place, the equipment is sound and that the management, and that is the most important thing, are aware of the issues that are properly in keeping with legal standards. Prior approval is a key issue about licensing as well as consistency.

Chairman: We will move on to finances and resources now. Mr Mitchell.

Mr Mitchell

555. You say in your evidence that many food safety statutory instruments are being introduced without the funding for associated advice and enforcement being allocated. Is that just a kind of whinge about central government standards that are being imposed without funding or can you actually produce instances where enforcement has been compromised because the funding has not been provided?

(*Mr Du Val*) I think broadly speaking there is a definite perception that these sorts of issues are not dealt with properly. Previously you would have found a compliance cost assessment for businesses but not a compliance cost assessment for implementing regulations and enforcing them, which suggested there was a particular focus on one need and not the other. In that context there is a general perception. An example would be the new General Food Hygiene Regulations which implemented the European Directive, the horizontal Directive. Because that replaced the existing Food Hygiene Regulations it was suggested that there were no financial implications for enforcement but, of course, the regulations had some very significant differences: the requirement in relation to training of food handlers, the requirement in relation to hazard analysis and management systems that needed to be implemented. The new regulations have required a lot more proactivity from authorities in terms of promoting these things to businesses and of course all of that was not recognised as having any financial implications. We believe that is wrong because obviously it does have financial implications. I think there is also some concern in another broad area where legislation seems to have multiplied, particularly in relation to the BSE controls. Local authorities have a role, they want to play that role and to play it properly but there are concerns that there are no funding implications identified.

(*Mr Ashley*) We obviously try very hard not to whinge. We have had a fair amount of practice over a couple of decades.

556. What makes you unique in local government!

(*Mr Ashley*) We are used to being asked to take on new responsibilities, indeed statutory duties, without there being specific additional funds being allocated. Local authorities are now extremely adept at having to reprioritise their work, including within the broad area of environmental health that I think was explored in your discussions with the Chartered Institute. Prioritisation has to be the key to this for local authorities.

Mr Mitchell

557. Is this issue likely to arise over the ban on beef on the bone? How much extra expenditure is that likely to impose?

(*Mr Ashley*) I do not think that assessment has been done and I would not expect in the generality of local authority expenditure as a whole, and that is what we are looking at, that it is a very substantial increase. That does underscore why we are concerned in our evidence and more generally to avoid the ring-fencing of funding which goes back to the question that was begun to be raised earlier.

558. You do say in your evidence: "...the proportion of the total rate support grant allocated for food safety enforcement work is not readily communicated to local authorities, which makes allocation of the funds difficult." That seems to be an argument towards ring-fencing, does it not, because you want to know what you are being allocated for that purpose but you do not want it ring-fenced?

(*Mr Ashley*) I think the difficulty on that is although we are sitting here today concerned about the priority that the government and local authorities wish to give to this particular matter, food safety, the following day we are concerned, for example, about housing and the day after that about education and the basic problem is that we simply do not receive enough funding to be able to discharge all of those responsibilities to the full level that we would like to

[**Mr Mitchell** *Cont*]
and therefore we need that flexibility which ring-fencing constrains in order to be able to duck and dive frankly in terms of being able to use the money that we have for the best possible purpose according to the priorities of individual local authorities. Local authorities are different and we should not be embarrassed about that, they will actually have a somewhat different set of priorities even though everybody expects a high level of priority to be given to something like food safety.

559. I do not know local government as well as most people around this table but is there an SSA for this? Is there a standing norm defined by an SSA?

(*Mr Ashley*) Not specifically for this particular area. There is a general SSA which deals with what used to be called the other services block in which environmental health and trading standards are put together. It is very difficult to identify. Even when Professor Pennington gave certain recommendations and a certain sum of money was unusually identified—£19 million—for some additional work, even then it was very difficult to follow that trail through in the provision of additional local authority funding because you did not know whether some other money somewhere else had been taken away. It is never disaggregated such that we can do those sums.

Mr Hayes

560. I want to press you on this because, unlike Mr Mitchell, I do have some experience of local government. I would like to press you on this issue of targeting, ring-fencing and focusing of resource. It seems to me it is very nice for you to have this very philanthropic and liberal view about social services and education and all the other marvellous things that you began to mention, housing was one of them, but I am more interested at the moment in food safety. Would not targeted, ring-fenced, focused money actually do two things: (a) guarantee a break in the inconsistency and (b) really make the issue a priority in the eyes of councillors and in the eyes of the public? The fact that you do not, as Mr Mitchell said, have an SSA means that this is a very tiny and perhaps arguably perceived as an insignificant part of the job of local authorities. Up against old people's homes and children's tax bills what chance are you going to have?

(*Mr Ashley*) The local authorities have taken very seriously the need to put money into this area. They have done since the 1990 Food Safety Act. The way in which the Local Government Association attempted to square this particular circle of being uneasy about the general principle of ring-fencing but recognising the importance that the government was signalling that it wished to give particular importance to food safety was that we circularised all of our local authorities and encouraged them to take this very seriously and to recognise that there had been some criticisms following the 1990 Act in which some people had suggested that not the full amount of the £30 million of additional money that was voted at that time for this area had found its way into food safety. We wanted to communicate that concern to local authorities to try and encourage them to spend the money that appeared to be identified for this on that subject.

561. Can I just finally ask a very straight question. Have there been any consultations with you or, to your knowledge, any related organisation with government on the likely cost of the beef on the bone ban?

(*Mr Ashley*) Not directly, no.

Mr Hayes: There have been no consultations you are aware of.

Mr Todd

562. I want to explore this issue of ring-fencing a little further. The previous witnesses actually endorsed the approach suggested by Professor James of reserve funding for this area and they are obviously the people who carry out the work, or are the representative body of the people who carry out the work, on behalf of local authorities. Can you explain that difference of opinion?

(*Mr Ashley*) It is not difficult to explain. Individual professions, individual services, will always be convinced that their particular service must take priority. They can always see a very good reason why their money should be ring-fenced and everybody else should take their chance with the larger pot. The Local Government Association has to take responsibility for the enormous generality of local government spending and, therefore, we recognise that there are lots of important priorities and that the only sensible way, with very few exceptions, is to allow a local authority to take a proper account of its priority, to listen to what government says about priorities for a particular area and then do that very difficult task annually of allocating money between different services. We are not necessarily always opposed to ring-fencing, there are some circumstances when a specific grant does make sense as compared to just the provision of general money through the RSG and those tend to be where a problem is very geographically concentrated where it would not make sense to provide money through the SSA all across the country spread thin, you concentrate it in a specific grant to deal with that particular problem. The classic example in recent years is probably HIV Aids money from the Department of Health and obviously there was a much greater problem in London and that is where the money was specifically directed. Most other problems are spread throughout the country and the SSA formula ensures that those areas that have particularly difficult problems to deal with will get the slightly larger part of that total cake.

563. So your view is that your environmental health officers are doing a bit of special pleading here to protect them against the tight regime of local authority expenditure, for example, and you are confident that your authority members are allocating sufficient resources to meet the requirements in food safety?

(*Mr Ashley*) Yes, within the constraints that they are facing.

564. That is quite a tough qualification that you have just thrown in.

[**Mr Todd** *Cont*]

(*Mr Ashley*) Yes, it is, but broadly we are confident that they are providing the resources.

565. You say "broadly" as well which is another qualification. What we are looking for and focusing on, if I am correct in the broad message you gave of the powers of local authorities, being an ex-councillor, is that we have to be confident that local authorities are meeting their responsibilities to deal with food safety issues? You have thrown in a number of qualifications in your answer which might imply that it depends quite a lot on where you are in the country as to whether that is true or not.

(*Mr Ashley*) I do not think it so much depends on where in the country, I think it is just a problem faced by local authorities generally that they do have to juggle these different priorities. I do not think there is any question that given what has happened in the 1990s food safety has become a very important priority for local authorities and therefore I think that in general—forgive me, in general—local authorities are doing their very best to meet those problems.

Mr Todd: I think we have got the message.

Ms Keeble

566. I wanted to ask you about the Food Standards Agency. In the James Report it says that "LACOTS would retain an important role as a channel for local authority communication and might be considered as an appropriate component of the Agency with joint responsibility to both local authorities and the Agency's Executive." Could the Committee have your comments on these proposals and in particular how you would envisage them working?

(*Cllr Ryan*) I think overall the LGA or LACOTS are broadly in favour of the Agency.

567. Yes.

(*Cllr Ryan*) It is to do with a lot of the continuing role of LAs, local authorities, in enforcement with an over-reaching broad sense of it.

568. What is your role then? Once we have got the Agency, what is your relationship and what is your role?

(*Cllr Ryan*) The role again is local democracy in the enforcement side but obviously to make sure there is consistency there again. We are not against anything to make sure that consistency works. What we would like to make sure is there is a good working relationship between local authorities through the LGA and LACOTS and the new Agency.

(*Mr Du Val*) I think obviously our position to some extent is going to have to wait and see. Professor James put forward the proposals and you can apply those proposals in a variety of ways. I think he recognised that, within his proposals, himself by what he was saying. It is one to wait for the White Paper in terms of broadly what the Agency will do and how that will impact on LACOTS. From our perspective as an organisation—you would expect this—we are not aware that we are doing the job badly in any sort of context, in fact if anything I think in the last five years there has been a lot of support for what LACOTS has done and a lot of supporters within the trade. Broadly speaking we have been a success. We have argued, again you might not be surprised, when setting up the Food Standards Agency consideration be given as to LACOTS continuing its functions but with a much clearer and stronger relationship with the Agency itself so allowing local governments to continue.

Ms Keeble: One of the issues that has also been identified in the James Report was considerable overlap. Overlap can sometimes help and it can sometimes cause a terrible bureaucratic muddle. What would you like to see your role being to ensure that there is maximum use of your resources?

Chairman

569. Did you submit formal evidence to the enquiry?

(*Mr Du Val*) Yes indeed.

Ms Keeble

570. We have got it here I think.

(*Mr Du Val*) We take the view that LACOTS can continue to promote the best practice and can continue with its advisory networks, to working out solutions to problems as they develop. We obviously see the Agency as concentrating much more on the monitoring and auditing role which is something that LACOTS has not ever done. It is a case of looking at the clearly defined responsibilities. We would not want to be competing with the Agency or for there to be overlap, we want very clear defined responsibilities in working relationships. The most obvious model that we would prefer is that the Food Standards Agency would have a responsibility, I think a statutory responsibility, for ensuring that there was consistency of enforcement, proportionality of enforcement, by individual local authorities but that statutory responsibility could be delegated in terms of actual operational work to LACOTS that has very considerable experience over 20 years.

571. I have just got one other question which is in your evidence you say that you would want to see the inclusion of nutrition in the remit of the Agency. That is obviously one of the very controversial areas. What would be helpful would be if you could just explain what you mean by "nutrition" because from the various comments I have heard both here and in general public discussion some people think nutrition is talking about whether you have got more or less salt or sugar in your food and some people think it is about advice on what people should eat. I would appreciate it if you could just say exactly what you mean by "nutrition"?

(*Cllr Ryan*) Mark?

572. Is this why it is such a difficult issue for anyone to resolve?

(*Mr Du Val*) I think we appreciate the difficulty. I suppose we are looking at it in part in the context of nutrition and some of the legislative elements that impact on labelling and things like that but we also see nutrition in the wider public health context in which local authorities have a significant role in terms of promoting public health. The difficulty is what we are not arguing is that nutrition should be in

[**Ms Keeble** *Cont*]
the Food Standards Agency so that Environmental Health Officers can go around telling people "this is what you have to eat and if you do not eat it you will be in court". What we are having to deal with is this very difficult interface in that context. We do believe it is important that the Agency has this wide remit because food is part of this whole public health agenda.

Chairman: I actually have not seen the formal submission you made on this subject.

Ms Keebles: I am looking at the paragraph here.

Chairman: I wonder if you could let us have a copy of your submission so we can take all of your views into full account.

Ms Jones

573. In the second paragraph of your evidence you describe some of the issues with which LACOTS is currently involved. Could you choose one or two of these issues and briefly explain to the Committee the procedures you followed in preparing and issuing draft guidelines?

(*Mr Du Val*) What I did on the way over was I picked up one example that we did which is on wild game. What happened here was you had a horizontal European Directive put into place, the General Hygiene Regulations, which was essentially a Directive which was written for food businesses, food premises, restaurants, catering and things like that, that suddenly impacted on shooting wild game out of the sky and handling that sort of thing. What you had was something that perhaps if interpreted incorrectly, not with flexibility, could have significant effects on the industry. There was concern about that. What we did was we identified expertise within the local authority sector dealing with these issues, drew up some guidelines, worked it through with the trade bodies, trade associations, worked with them to come to a set of guidelines that we all agreed provided a pragmatic and sensible way of applying the legislation in this very, very difficult area, an important area in relation to food safety. Broadly speaking that is how we regularly work. I can obviously provide further copies if you would be interested. That is what we did. You find an issue, you look at how best to approach it, if it is enforcement you tend to set up an enforcement consultative group, if it is very much a trade enforcement issue you would be working to do something jointly together and out of that you draw on the best practice, you set it down and then you can issue it to provide that sort of consistent framework. I have to say also in that context they are all public documents. It is not that we are issuing things just to enforcers, the trade has access to these documents and we are very aware that if we say something that is out of place then the trade will come back to us; likewise the consumers can have the document or anyone can. It is working together to get consensus in a sensible way.

(*Mr Boon*) If I could perhaps expand on that to explain that we have a network of 50 liaison groups and within those 50 liaison groups all local authorities are represented in one way or another. Many of these issues and many of these ideas and inconsistencies or concerns or problems are fed through that process into the central LACOTS body which is then responsible for producing this kind of guidance in the way that Mark has described. That way it is from the grass roots. Also we can use it for consultation and advice as to whether we have got it right or wrong. In a sense we have that network already set up.

574. I was curious as to the examples mentioned in the relevant paragraph. You have just explained, I think I am right in understanding, that the guidelines on wild game came about as a result of legislation from elsewhere. What would be the reasons, for instance, for looking at salmonella infections in milk or contaminated spices? Could we conclude from that that there are specific problems in those areas?

(*Mr Du Val*) These are specific issues that have been raised. Contaminated spices, as an example, came out of a number of incidents where imported spices had salmonella contamination and there was concern about how you should deal with that, particularly as eating habits have changed. Normally spices would be cooked so salmonella contamination would be killed in the cooking process but increasingly spices are being used in high risk foods, mixed with mayonnaise and things like that. There was that issue of how to deal with it. What we have had to do is to work with Government and also the local authorities and the port health people, the Public Health Laboratory Service and the Association of Public Analysts, but also the trade associations to try and come to a view as to how you deal with these things, when should we not accept spices into this country, when spices should go for treatment and those sorts of issues. Issues generally tend to come from either local authority concerns, new legislation, a particular issue that may have occurred in one locality and as you begin to ask questions you will find a number of people are struggling with the same concerns. It is that that leads us to deciding to do some work on it.

Chairman: I think we have probably got to move on and we will try and put two more questions. Perhaps you could send us some examples of guidance notes.

Ms Keeble: With the timescales so that we understand the timescales for producing it.

Mr Hayes

575. You say that procedures for converting research findings into practical advice are not well developed, and you advocate setting up some small central unit to remedy that situation. How feasible is it, how practical would it be, to have the necessary expertise to review all food safety research and advice from a range of sources? To what extent do local government enforcement officers currently take account of such food research? I am mindful of the fact that in a number of the scares, and not just scares, the problems we have had recently, there has been quite sharply conflicting research advice. How practical and how feasible would it be for you to draw all of that together in a coherent way?

(*Mr Du Val*) In terms of what we are trying to advocate, we have concerns that there is the research out there and concerns that proper messages come out for both enforcers and indeed the wider industry.

[**Mr Hayes** *Cont*]

I accept that perhaps the language we use, if we are talking about all food safety research, is somewhat excessive but there is a lot of research out there and it is important that message gets communicated to the people on the ground in some sort of co-ordinated fashion. That is why we are advocating some sort of central unit rather than 500 individual authorities doing that. We are looking towards something central. We could argue LACOTS could do that and obviously if LACOTS was funded then it would be something that we could actually do. I believe there are perhaps better equipped people with existing scientific expertise and background in terms of that to achieve that. In the context of using it, I think enforcers welcome this sort of practical information and there is a very real desire for it. The difficulties with some of these things is that sometimes there is conflicting research or perhaps certain people promote only one part of it. I think it is important that there is a body taking responsibility for putting out a clear message. An example would be in the last couple of years the discussion on wooden chopping boards where new research seemed to conflict with other existing research and people were saying "can you use wood or can you not use wood?" That creates a lot of uncertainty in people's minds as to what you do. In the context of food legislation what is a risk is important because you can enforce that. Legislation does not say that you cannot use wooden chopping boards, it is all related to risk. I think that is why putting it into the public domain in these sorts of practical ways is very important.

(*Mr Boon*) I think there may be a solution to that within the James Report, he did identify this as an issue as well and recommended that the Agency takes a role in this area.

Ms Keeble

576. I want to ask about paragraph 4.5 in your report and in particular the points you make about the lack of a legal requirement for retailers to chill-control foods, in particular meat. When we had one of the big supermarket chains here recently they talked at great length about how their food safety systems were largely based about their ability to keep food at constant and chilled temperatures virtually from when it leaves the abattoir to when it is on the supermarket shelf and even then it is controlled. Are you saying that there is a specific problem here much more with the smaller retailers? What practical steps could then be taken to deal with that given that the large people can do it because they have got economies of scale and they can control their suppliers and so on? Is there not an issue right along the chain of food? How do you seriously deal with it? If you just imposed the rules it would be (a) probably unenforceable and (b) there would be other areas of the food chain where you might also need to control.

(*Mr Du Val*) I think the concern of practitioners on the ground is that there is no specific legal requirement in relation to the retail side to provide refrigeration of raw materials like raw meat and raw poultry. A lot of retailers provide that. They provide it as good practice, they actually do it. They invest in that. Our concern is that some do not.

577. It is about the small ones rather than the big ones?

(*Mr Du Val*) It is a minority and perhaps particular types of trading processes, market type environments and those sorts of things. There is this concern, particularly in relation to food safety, because obviously temperature control is so essential. Whilst we do accept that if raw meat is properly cooked hopefully that will deal with the matter there is this concern that with raw meat and raw poultry being kept out of temperature control certain pathogens, particularly things like salmonella and e-colis, will actually multiply. I think we firmly believe that it is reasonable to expect all retailers to actually refrigerate these sorts of products because of their linkage in relation to the food poisoning issue.

Chairman: Gentlemen, I am afraid, unsatisfactory though it is, we will have to draw matters to a conclusion there. There may be some issues which we will reflect on that we may have wished we asked you and if we may we will write to you about those issues to get some further information. I am genuinely grateful to you for your evidence today. Thank you very much.

Supplementary Memorandum submitted by LACOTS and the Local Government Association (C 76)

I refer to the oral evidence that LACOTS and the Local Government Association gave to the Committee this week. The Chair of the Committee asked that we provide further information on a number of matters and I trust the enclosed will assist the Committee in its deliberations.

FOOD STANDARDS AGENCY: AN INTERIM PROPOSAL BY PROFESSOR PHILIP JAMES

I have enclosed copies of the joint LACOTS and Local Government Association response to Philip James' proposals and the separate LACOTS response which deals specifically with those parts of the report which name LACOTS [not printed].

LACOTS Guidance

I have enclosed 10 copies of two of LACOTS recent publications: Food Safety Hazard Analysis—Guidance on Securing Compliance with the Hazard Analysis Requirement (July 1997) and Wild Game-Guidance on Recommended Standards for Wild Game (October 1997). Also enclosed are one sheet brief summaries of the key dates which set out the broad timescales and actions which led to the publication of these documents (See Annex). The Committee will appreciate that the extensive consultation process means the documents do take some considerable time to develop.

Where there are enforcement issues which are urgent and necessitate a specific quick response, LACOTS advisers are committed to what we described as a "fast track conciliation service". Such urgent matters are considered and advice issued within a maximum fixed timescale of 28 days. This particular procedure has been used where there are differences of opinion between two different local authorities impacting on particular food businesses. Such significant differences are rare but when they do occur, we recognise it is necessary to provide a quick response, hopefully to the satisfaction of all parties.

LACOTS: The Organisation

I have enclosed summary leaflets on LACOTS which briefly describe its aims, structure, funding and operational strategies. I would be very happy to provide further information if that would be helpful.

Good Law Best Practice

I have also enclosed copies of a leaflet which LACOTS produced in February 1997 entitled "Agenda for the Future—A Regulators View of Good Law and Best Enforcement Practice". This sets out the broad principles to which LACOTS subscribes and promotes in the context of ensuring both good legislation and good enforcement. Whilst some of the recommendations clearly focus on Government's role (particularly in the context of the preparation of legislation), we recognise that local authorities have very significant responsibilities themselves in the delivery of effective and consistent enforcement.

If you would like further information on any of these matters then please do not hesitate to contact me. The Chair of the Committee did remark that there may also be follow-up questions arising out of either our oral or written evidence. If I can be of any further assistance then please let me know.

19 December 1997

Annex

LACOTS FOOD SAFETY HAZARD ANALYSIS—GUIDANCE ON SECURING COMPLIANCE WITH THE HAZARD ANALYSIS REQUIREMENT (JULY 1997)

Key Development Dates

September 1995:	New Regulations come into force including a requirement for food business proprietors to undertake a hazard analysis of their business operations to identify steps critical to food safety and identify and implement safety procedures and associated monitoring.
October 1995-March 1996:	Discussion at LACOTS Advisory Groups, within local authority food liaison groups, and with individual local authorities, trade associations and Government officials regarding issues arising out of the new Regulations and, in particular, enforcement of the hazard analysis requirement.
April-May 1996:	Development of a consultation document on local authority approaches to securing compliance with the hazard analysis requirement. Consultation with LACOTS advisers before circulation.
May 1996:	Circulation of the discussion document to UK local authority food liaison groups (circa 60, representing all local authorities throughout the UK). The document was also circulated to key food trade associations and other relevant professionals. Three month consultation period.
August-September 1996:	Interim circular drafted, consulted with LACOTS advisers and Government and issued to local authorities regarding enforcement of the hazard analysis requirement.
September-December 1996:	Consideration of the comments received following consultation on the discussion document and the development of detailed guidance on securing compliance with the hazard analysis requirement.

January 1997-July 1997:	Requests by central government officials to delay publication whilst the interim and final reports and recommendations of the Pennington Group were considered and the Government response finalised.
July 1997:	Publication and circulation of document to all local authorities throughout the UK and other subscribers to LACOTS information e.g. trade associations.
August 1997:	Government Departments letters to authorities in England, Wales, Scotland and Northern Ireland regarding implementation of the Pennington Group's recommendations include reference to the LACOTS Guidance confirming that it is consistent with the Government's view on sensible enforcement and promoting its use amongst local authorities.

ADDENDUM

September-November 1997:	Development of a training package for local authorities to support the document's key messages and build on its guidance to ensure a consistent approach.
December 1997-January 1998:	Regional seminars throughout England, funded by the Department of Health and administered by LACOTS, allowing all local authorities to attend.

LACOTS WILD GAME—GUIDANCE ON RECOMMENDED STANDARDS FOR WILD GAME (OCTOBER 1997)

KEY DEVELOPMENT DATES

February 1996:	West Sussex Food Liaison Group suggested guidance was necessary on Wild Game in the context of the new Regulations.
March-April 1996:	LACOTS advisers consulted and supported the proposal to produce detailed guidelines.
May 1996:	LACOTS lead adviser produces first draft and sent to key LACOTS advisers for initial consideration.
July 1996:	Draft made available to UK food liaison groups on request. Other trade bodies formally consulted.
November 1996-February 1997:	Consideration of comments received and document redrafted.
March-August 1997:	Redrafted document considered further by LACOTS advisers and other previous consultees.
August 1997-September 1997:	Further comments incorporated and final consultation with trade associations and Government Departments.
October 1997:	Publication and circulation to all local authorities and subscribers to LACOTS information service. Copies made available to relevant trade associations at reduced rates.

Supplementary Memorandum submitted by LACOTS and the Local Government Association (C82)

1. *[Paragraph 3.2 of the LACOTS/LGA written evidence]: as many of the recommendations produced by the Government's advisory committees are addressed to the food industry, rather than the Government itself, to what extent, from your experience, are such recommendations acted upon by the food industry?*

1.1 LACOTS and the LGA recognise that a number of the recommendations made by the Government's advisory committees are addressed to the food industry. The Government in providing its response to an advisory committee's report and recommendations often endorses those recommendations specifically addressed to the food industry. The Government may, in its formal response, also indicate what part it may play in, perhaps, bringing together relevant trade bodies to take matters forward or bringing matters to the attention of relevant trade organisations. The important role of Government in facilitating a positive response and action by the industry should not be underestimated. Nevertheless, it is the responsibility of the industry to respond positively to the relevant recommendations.

1.2 LACOTS and the LGA believe that it is essential a system is introduced to review progress on implementing any recommendations which have been accepted by Government. This would not focus solely on those recommendations directed to Government but also those relevant to others, such as the food industry. It is important that recommendations made by expert advisory committees are acted upon. Any review process should assess what steps food industry organisations take to promote or action relevant recommendations and give advice on any changes to, for example, practices appropriate to an industry sector to effect those recommendations. The actions of other bodies, such as local authorities, to promote the recommendations should also be reviewed. However, Government's own actions should also be monitored to ensure progress and timely changes.

1.3 Anecdotal evidence from local authority advisers suggests that whether or not recommendations are acted upon by food businesses will depend, in part, on how the recommendations have been explained and promoted and, therefore, the seriousness which business proprietors attach to either implementing or ignoring the recommendations. Local authorities will incorporate the recommendations into any advice given to businesses either following inspections or in promotion/training events. However, unless there is a statutory basis to require businesses to implement the recommendations, they can only be presented as "recommendations of good practice". Again anecdotally it is suggested that whilst many businesses will implement recommendations when they are aware of them, an important minority are only interested in changing practices where there is a statutory requirement to do so. There is a real perception that whether or not recommendations are acted upon will often depend on whether or not the recommendation is in the interests of the industry. A formal process of reviewing the voluntary implementation of recommendations by businesses would seem appropriate.

1.4 Examples of recommendations which would appear not to have been effectively acted upon are from the ACMSF's 1993 *Salmonella in Eggs* report:

> *"Caterers should continue to increase their use of pasteurised egg, particularly for dishes that are not subject to further cooking prior to consumption."*
>
> *"Manufacturers and retailers, together with consumer organisations, should consider how best to encourage consumers to use pasteurised egg instead of shell egg, where appropriate."*

1.5 In February 1993 the Department of Health asked for views on how these recommendations might best be followed up. However, LACOTS is not aware of any further work by Government on these recommendations, and as we stated in paragraph 4.8 of our written submission (and the further evidence provided in this supplementary memorandum), authorities are concerned about the continued use of raw eggs by some caterers in uncooked or lightly cooked dishes and the continued inclusion of raw eggs in published recipes and on television cookery programmes. The availability, use or awareness of pasteurised egg for catering and domestic purposes does not appear to have increased following the ACMSF recommendations.

2. *[Paragraph 4.8 of the LACOTS/LGA written evidence]: under what circumstances do you believe the use of raw eggs should be regarded as a hazard under the Food Safety (General Food Hygiene) Regulations 1995?*

2.1 Documented evidence exists, primarily from investigations of outbreaks of foodborne disease, linking the use of raw eggs in uncooked or lightly cooked dishes to food poisoning. A particular concern is the prominence of premises such as residential and nursing homes in these outbreaks. Advice issued by the Department of Health in 1990 stated that "everyone should avoid eating raw eggs or uncooked dishes made from them, and vulnerable groups, such as the elderly, the sick, babies, toddlers and pregnant women should make sure that any eggs they eat are thoroughly cooked until the white and yolk are solid." However, for healthy people it was stated that there was very little risk from eating eggs which are cooked whether boiled, fried, scrambled or poached.

2.2 The Government's Advisory Committee on the Microbiological Safety of Food in its 1993 report *Salmonella in Eggs* recognised, as the Government had done previously, the hazards associated with the use of raw eggs in uncooked or lightly cooked dishes. That Committee recommended that "caterers should continue to increase the use of pasteurised egg, particularly for dishes that are not subject to further cooking prior to consumption." The introduction of the Food Safety (General Food Hygiene) Regulations 1995 and their new "hazard analysis" requirement has resulted in significant discussion amongst local authorities regarding potential enforcement action where certain businesses, particularly in the catering sector, continue to use raw eggs in uncooked/lightly cooked dishes.

2.3 The new "hazard analysis" provision in the above Regulations requires proprietors to "identify any step in the activities of the food business which is critical to ensuring food safety and to ensure that adequate safety procedures are implemented, maintained and reviewed." A number of principles are set out in the Regulations on which the analysis should be structured. The first is to analyse the potential food hazards in the food business's operations, followed by identifying the points in the operations where the food hazards may occur and subsequently deciding which of the points identified are critical to ensuring food safety. There would appear to be general agreement that the continued use of raw eggs in uncooked or lightly cooked dishes is a point in a food business's operations which is critical to food safety.

2.4 The Regulations go on to require the identification and implementation of effective control and monitoring procedures at those critical points. What is not clear is whether, in the light of the association between the use of raw eggs in uncooked or lightly cooked dishes and food poisoning cases and outbreaks, the only effective control is to stop their use in these situations in commercial businesses (with replacement by pasteurised egg). This is a matter on which LACOTS has been seeking advice from Government, specifically the Department of Health, over the last year. To date, no reply has been received.

2.5 There are a whole variety of controls that a food business might undertake should it wish to continue to use raw eggs in uncooked or partly cooked dishes. The question is whether or not implementing certain of those controls makes the risk to the public acceptable. One specific action a caterer might take would be providing information to customers, such as labelling on menus, where the use of raw eggs in uncooked or lightly cooked dishes continues. But are consumers well enough informed to make a judgement with regard to the risks?

2.6 LACOTS and the LGA both believe that the use of raw eggs should be regarded as a hazard under the Food Safety (General Food Hygiene) Regulations 1995. However, the more difficult question to answer is whether the risks associated with the continued use of raw eggs in uncooked or partly cooked dishes sold from caterers can be acceptably reduced using certain controls. Also, what role informing consumers might have as a part of those controls. Some might argue that the risks are such that in commercial operations the continued use of raw eggs should be prohibited. LACOTS and the LGA believe the Government should urgently provide clear advice to enforcers, industry and consumers on these matters.

15 January 1998

Memorandum submitted by The Association of Public Analysts (C46)

1 BACKGROUND

These comments are in response to a press notice issued on 30 July by the Agriculture Committee of the House of Commons inviting comments on current issues relating to food safety. This call for comment refers to a number of specific areas of food safety. These are listed as:

(a) recent trends in the incidence of bacterial food poisoning in the UK

(b) significant gaps in the understanding of, and statistical information on food safety issues

(c) the level of food safety risk at various stages in the food chain

(d) the food safety implications of the presence of genetically modified organisms in the food chain

2 PUBLIC ANALYSTS

Public Analysts are statutory analytical scientists, appointed by Local Authorities in the United Kingdom for the purpose of the official chemical analysis and microbiological examination of foodstuffs. They must possess the statutory qualification of Mastership in Chemical Analysis awarded by the Royal Society of Chemistry. This qualification is described in Food Safety Act 1990 and Agriculture Act 1970 legislation. There are 31 Public Analysts' laboratories situated throughout the UK employing in total around 600 staff. Public Analysts are represented professionally by both the Royal Society of Chemistry and the Association of Public Analysts.

The training of Public Analysts includes food analysis and science, food technology, microbiology, law, agricultural matters, and the interpretation of data obtained during analysis and examination. It is in the capacity of representing the views of official enforcement scientists that the Association makes these comments.

3 UNSAFE FOOD

Section 8 of the Food Safety Act 1990 makes it an offence to sell food which is unsafe either because it it unfit for human consumption or because it is so contaminated that it would not be reasonable to expect it to be used for human consumption. And consequently food that is contaminated with pathogenic organisms, with chemicals, such as solvents, toxic metals, glass etc. can be unsafe. The detection of unsafe food is a matter for scientific investigation and this can involve microbiological examination, or chemical analysis or indeed both. An example of unsafe food requiring both chemical and microbiological assessment is in the case of scromboid fish such as tuna and mackerel. On spoilage these fish, which are naturally rich in the amino acid histidine, can decompose to produce the chemical histamine. Many people react adversely to histamine consumption. Whilst the mechanism for its decomposition is microbiological the detection of histamine in the fish is a matter for chemical analysis. Additionally food that is putrid or partly decomposed can be unsafe and again the scientific investigation necessary involves both microbiological examination and chemical analysis of the food.

Determining the proportions of toxic elements such as lead and arsenic in food calls for chemical analysis as indeed does the assessment of food additives such as synthetic colouring agents, preservatives and artificial sweeteners.

Prosecutions for the sale of unfit food are usually taken in magistrates' courts and it is for the court to decide, based on scientific evidence and the interpretation presented to it, whether or not a food is unsafe.

There has been recently much emphasis placed on the microbial contamination of food by pathogenic organisms such as *E.coli* O157, Salmonella and *Listeria.* Spoilage by non-pathogenic organisms and chemicals can also result in situations where food is rendered unsafe.

4 Recent Trends in the Incidence of Bacterial Contamination and Spoilage of Food in the UK

The results of official analysis and exmination of foodstuffs are gathered from local authorities by the Ministry of Agriculture, Fisheries and Food (MAFF) as statistics. In addition, the Association publishes annually the statistics of samples analysed in Public Analysts' laboratories. However, it is not presently possible to analyse the data generated in Public Analysts' laboratories in the detail necessary to draw a conclusion concerning trends that may be apparent.

5 Significant Gaps in Understanding and Knowledge

Microbiological Standards and Guidelines

There are some microbiological standards for foodstuffs set out in UK legislation. Milk and minced meats, for example, have prescribed standards but for the vast majority of other foodstuffs, both raw and cooked, no such prescribed standards exist. In contrast we point towards the control of the lead and arsenic content of all foodstuffs. The maximum permitted levels are set out in legislation and therefore court room debate is not necessary in order to establish that a food is unsafe to eat if it is contaminated with lead or arsenic above these levels. However such debate would be necessary for the microbiological contamination and spoilage of the majority of foodstuffs. The Association would therefore support the development of statutory microbiological standards or guidelines for both raw and cooked foodstuffs as a matter of priority.

5.2 Inspection of Food Processing, Storage and Distribution

This aspect of food control needs the involvement of official food scientists to enable all relevant aspects of food safety to be considered (see para 6.2 below.)

6 The Level of Food Safety Risk at all Stages in the Human Food chain

6.1 Agricultural matters

Accompaying these comments are the Annual Report and Statistics of the Association of Public Analysts. It is as enforcement scientists that we draw attention to the small numbers of samples analysed for the purpose of the Agriculture Act 1970 (page 12 of the report). These samples include feedingstuffs analysed for nutritional details and deleterious substances, and fertilisers analysed for the proportions of plant nutrients. Medicated feeding stuffs are analysed for the proportions of medication in the feeds.

6.2 Food Processing and the retail sector

The food processing industry and food retail sectors are inspected by local authorities in accordance with the Codes of Practice issued under the Food Safety Act 1990. We urge that this inspection should involve a team which includes an official food scientist, either a Public Analyst or Food Examiner as appropriate, this involvement being in the planning of the inspection or the actual inspection itself. Many, though not all local authorities, carry out food standard and health inspections without Public Analysts and Food Examiners, the statutory scientists. The authorised officers who carry out these inspections are often not qualified in food science, rather their qualifications are in trading standards and environmental health. Involving appropriately qualified scientists will, we believe, add to consumer confidence.

6.3 Domestic Households

Domestic households are the end users of foods and the labelling requirements for the safe use of purchased foods are contained in the Food Labelling Regulations 1996. These require, where appropriate, food labels to include:

(a) instructions for use

(b) indications of durability, i.e. best before and use by dates

(c) storage instructions

(d) nutritional data and health claims where appropriate

For non-prepacked foods information abut previous treatments such as freezing and thawing are required to be given with the food. The Association is of the opinion that this labelling information, if conspicuously given, is sufficient to ensure the safe use of food within the house.

The use of educational material and other information concerning the use of food within the home can only support its proper use.

7. RESOURCES

7.1 *Funding*

The study by Professor James accurately identifies that funding mechanisms are crucial to scientific and food law enforcement services. His report describes shortcomings in the present arrangements which result in underfunding by local authorities. One conclusion reached was that "all funding for food safety work should be channelled through the new agency". The Association concurs.

7.2 *Qualifications of Official Food Scientists*

The scientist directing and interpreting the analysis and examination of a foodstuff, is the person with ultimate responsibility for presenting evidence concerning the safety of that foodstuff.

The Public Analyst, who deals with both chemical and microbiological aspects of a foodstuff's composition, is required to possess a postgraduate qualification which includes in the syllabus not only analytical science but also food and agriculture law and technology and the interpretation of analytical data. These are important aspects of the subject matter necessary for professional enforcement.

The Food Examiner, who deals exclusively with the microbiological aspects of foodstuffs, is not currently required to possess a similar postgraduate qualification and so has not been attested in relevant law, the Food Safety Act 1990 and its regulations, and aspects of food manufacture, storage and handling. Rather the food examiner is merely required to possess a basic graduate qualification in microbiological science. The Association recommends that Food Examiners should also possess a relevant postgraduate qualification. Such a qualification will enhance public confidence in the Food Examiners' ability.

8. *Food safety implications of the presence of genetically modified organisms and other novel processes used in food manufacture and production*

The Association recognises that novel food manufacturing processes, new plant breeding techniques and, indeed, novel foods will always come onto the market. The health aspects of these novel foods will have been adjudged on best possible available information. Regulation 11 of the Food Labelling Regulations 1996 requires that where a purchaser could be misled by the omission of an indication of a food's treatment the name of the food should be accompanied by such an indication. The Association advocates, in order to enable consumers to make informed choice concerning their diet, that this provision should include identifying genetically modified foods as such.

9. *Food Fraud and Contamination (not necessarily having a food safety implication)*

Currently food safety, and in particular the microbioligical safety of food, are uppermost in public concern. However food fraud continues to be an ever present problem. The substitution of one food by another, and the dilution of food and drinks by water are common occurrences. Diethylene glycol, so called antifreeze, and methanol have been found in alcoholic drinks. The contamination of meat of one species by that of another is also a frequent finding. Sometimes offals or mechanically separated meat are added to minced meats. The results of this type of fraud and contamination are that the purchaser of a food is prejudiced by the purchase of it, the honest trader is placed at a considerable disadvantage and the keeping quality of the food may be affected.

10. *Conclusion*

The Association of Public Analysts is grateful for the opportunity of commenting on the aspects of food safety, food fraud and food contamination and will be pleased to offer further evidence, both written and oral.

15 October 1997

Examination of Witnesses

MR BRAXTON REYNOLDS, Vice President, and DR PETER CLARE, Honorary Secretary, The Association of Public Analysts, examined.

Chairman

578. Mr Reynolds, Dr Clare, thank you very much indeed. I am sorry that we have kept you waiting a bit but we spent rather longer with our first witnesses than we had intended in the light of today's developments. I apologise for that. Can I just ask you to introduce yourself and your colleague?

(*Mr Reynolds*) Thank you. I am Braxton Reynolds, the Vice President of the Association of Public Analysts. I am accompanied by Dr Peter Clare who is the Honorary Secretary of the Association. I am the Public Analyst and Official Agricultural Analyst for the Counties of Devon and Cornwall, Public Analyst for the Isles of Scilly, so I serve a population of about one and a half million. Peter Clare is the Public Analyst and Official Agricultural Analyst for the Counties of Lincolnshire and Nottinghamshire and the City of Sheffield and for the Metropolitan Authorities of Barnsley, Doncaster and Rotherham. He serves a population of about two and a half million. In view of the time I have prepared by way of introduction a paper that would have covered most of the matters that I would deal with. I do have a considerable number of copies of this and I would be happy to hand them to your Committee Clerk.

579. That would be extremely helpful, Mr Reynolds, I am very grateful for that.

(*Mr Reynolds*) In particular I should outline the terms and the role of the Public Analysts.

Chairman: I shall come and ask you that in a moment, if I may, Mr Reynolds. Mr Mitchell has a question he wants to ask you initially.

Mr Mitchell

580. Can I just ask you something that is puzzling me because in the comments you gave us on food safety you say on page two: "it is not presently possible to analyse the data generated in Public Analysts' laboratories in the detail necessary to draw a conclusion concerning trends..." but in the Annual Report for 1996 you do indeed identify trends because what you pick out is that there is a reduction in the total number of food samples since 1993, there is enormous variability between local authorities and the number of formal and informal samples they take per capita and that about 20 per cent of samples contravene aspects of food legislation. Why did you say you cannot identify trends when you are identifying them?

(*Mr Reynolds*) The trends to which we are referring are trends in bacteriological food poisoning. We were expressly addressing that matter in the memorandum in accordance with the questions as set out in the invitation to submit a memorandum.

581. So you cannot say whether that is up or down?

(*Mr Reynolds*) We cannot say whether that is up or down from the amount of data which on a voluntary basis, and the Association is a voluntary association, we have been able to collate. Nevertheless it is our intention, because of the interest shown by this Committee, to look at that matter to see whether within the form of data collected which we have it is possible to address that matter.

582. Can you tell me the difference between official samples and unofficial samples? Are they all tested for microbiological or chemical contamination?

(*Mr Reynolds*) That is a matter which Dr Clare will try to answer.

(*Dr Clare*) An official sample is taken in accordance with the requirements of the Food Safety Act by sampling officers in the field and then submitted to the laboratory. As a consequence of any results of analysis or examination legal action can follow through the courts. An unofficial sample is not taken in accordance with the provisions of the Food Safety Act. They may still be submitted for chemical analysis or examination.

583. It is analysed in the same way?

(*Dr Clare*) To the same standards.

584. Is this sampling concentrated on high risk foods?

(*Dr Clare*) The official samples?

585. Both. Either.

(*Dr Clare*) The local authorities will have programmes of both targeting and also general surveillance.

586. You draw attention to the small number of samples taken under the Agriculture Act, does that mean the balance of effort should be tilted towards primary production?

(*Mr Reynolds*) On the matter of primary production we recognise that the majority of the larger traders in food, the major supermarkets, do a great deal of very competent work in the investigation of the quality and safety of what they handle. We recognise also that when foods come into this country, particularly some of the stored products, say dried food, dried pulses, some of these may be infested. It is then going to be necessary to recognise that if they are found to be unusable in their present state they then have to be cleaned, one might say they have to be salvaged. At that stage they are likely to be fumigated. We will be concerned in the case of such foods if they contain mycotoxins that come from mould groups, etc. We will be concerned then whether there is sufficient testing carried out by those who will be trading in the lower quality foods, doubtless bought cheap and intended to be incorporated into the cheaper end of the market and therefore probably unless adequate testing, unless adequate surveillance, is carried out of those groups of food perhaps one may say that the poorer members of society, the people who are forced to buy the cheaper foods, are going to be in the firing line of food safety. Those are the concerns. Those are areas where local authorities could, I believe, and should be doing relatively more.

Chairman

587. Could you perhaps, Mr Reynolds, explain to us exactly how important food issues are in your work as public analysts? How much of your time do you spend on food matters? How much of your work is on statutory work and how much on non-statutory work? Do you want to see public analysts taking a more proactive role in food safety issues?

(*Mr Reynolds*) In terms of the proportion of work that is devoted my colleagues and I spend somewhere between 50 and 100 per cent of our time dealing with food. It changes. It may change because of changes in the perceived importance of the work which we have done and the level of sampling undertaken by local authorities. With cutbacks there have been significant reductions in some of the laboratories on the amount of work that is being done. I currently devote something of the order of 50 per cent of my time to matters that are strictly food related. In terms of proactivity, what we would like to do, yes we believe that we could and should do a great deal more. I suppose that as a profession generally we take the view that we probably are inadequately recognised for what we do and certainly under-used for what we can do.

588. That is very helpful. In fact, one specific way in which you think you are under-used is in the inspection of food premises by local authorities and environmental health officers?

(*Mr Reynolds*) Yes. That again is a matter that Dr Clare can comment on.

589. What do you think your involvement in those inspections would add to the inspections themselves?

(*Dr Clare*) First of all, we are highly trained and highly qualified scientists. I think to have a scientific input into the food inspection process would add to the information that the inspecting team could get at and focus their attention on maybe some aspects which they had not recognised. I would also add that it would be of considerable benefit to our laboratory analysis. Food manufacture, food processing, is really the opposite of food analysis. In the processing manufactured food is constructed and during analysis it is taken apart and examined. A detailed knowledge of the manufacturing processes would enable us to focus our analytical attention on the foods we were receiving and also increase and enhance our expertise.

590. Just precisely what is your expertise? You say you are highly qualified scientists, just for the benefit of the Committee what are the qualifications?

(*Mr Reynolds*) We have to have the Mastership in Chemical Analysis which is granted following examination by the Royal Society of Chemistry. Dr Peter Clare is a former Chief Examiner of the examination. He is also the Chairman of the Examination Board. It is an examination which is carried out with the benefit of external advisers and moderators and therefore it takes into account all the current developments that are relevant. It is an examination for which candidates would normally present themselves in their late 20s to mid-30s, occasionally later. It is an examination which is particularly demanding, it covers the chemistry, the microscopy, the composition of food, food processing, and it requires an understanding of the law that relates to food and indeed to a number of ancillary topics as well in the sort of work that is concerned with consumer protection in the round. As an examination it also fits the candidate to be appointed as an official agricultural analyst. It includes an understanding of the importance not only of human nutrition but animal nutrition, again in the round, so that we can establish whether or not irregularities in composition are prejudicial to purchasers.

591. That is a very full answer, thank you for that. Can you help the Committee by giving some specific examples of the ways in which that expertise can actually add to the inspection process and bring added insight?

(*Dr Clare*) As we have said in our memorandum, some laboratories are already involved in factory inspection and my laboratory is one of them. As an example I can use to illustrate that, I have visited factories with my trading standards colleagues and these factories in one case were involved in the production of fish products and by visiting the factories I was able to carry out some basic research into the incorporation of water into fish flesh and the impact that the amount of water had on the final product. That is one example.

592. Was it a food safety issue or a food quality issue?

(*Dr Clare*) That was a food quality issue. The second example I can give you is where we were investigating the incorporation of mechanically recovered meat into meat products. It is a difficult analysis to carry out in the laboratory, to identify the presence of mechanically recovered, mechanically separated meat from normal meat. By visiting the factory I was able to gain a greater insight into the origins of mechanically recovered meat, how it was manufactured and its properties, and that had an impact on the analysis that I then carried out in the laboratory. Without that factory visit I would have been very much analysing the materials without that information and therefore in the dark.

593. I think there is agreement that mechanically recovered meat is one of the major worries in food production. Are there good and bad methods of recovering meat mechanically? Do you need to make a series of visits to factories to see how individual people are doing it or is a one-off visit enough to understand the principles?

(*Dr Clare*) I have arranged to go back to see another factory to see how they process it. One of the interesting things about mechanically recovered meat, especially in the light of this meat on the bone issue that has happened recently, is that mechanically recovered meat from beef is a particular concerning issue these days and we are developing and looking at techniques to pursue this.

594. What you seem to be saying to me is that it is not really the inspection that you want to go along on, individually going to butcher shops and small supermarkets, you actually want to understand the process to help your later work in the laboratory?

[**Chairman** *Cont*]

(*Dr Clare*) Yes. We can target our involvement. We do not want to be involved in the day-to-day routine inspections where this would add nothing to our ability and nothing to the inspection success. That would be unnecessary.

595. Thank you. One last question from me. Do you think that there is any case for restructuring the various bodies involved at the local level, the Environmental Health Officers' work, your work, the involvement of LACOTS, three bodies? Is there any overlap that could be rationalised? Is there any advantage in some kind of institutional change?

(*Mr Reynolds*) It is possible to think in terms of a number of radical changes that could be made. I will preface my answer by saying that I am the Public Analyst Adviser to the Public Protection Committee of the LGA and the lead Public Analyst Adviser to LACOTS and indeed I chair the Sampling and Analysis Focus Group of LACOTS.

596. Well qualified to answer.

(*Mr Reynolds*) In addition, indeed, to serving on a number of advisory and working party committees that now deal with food contaminants and food contact contaminants. It would be possible to translate all of the work as public analysts centrally under the auspices, say, of a Food Standards Agency for service providers. We must put the service very much on a par with that of the Public Health Laboratory Service. Were one to do that it then becomes necessary to recognise all of the other functions which Public Analysts perform as analytical chemists, as scientific advisers, at local government level and indeed for the public at large. If one was to transfer all of the work to an agency so to remove it and separate it from local government work the other work would have to keep the laboratories going and I think it is fair to say that there would be a collapse of all of the other functions that occur. One can think of ways in which one can transfer the work that I do and that our senior staff do to an agency, possibly putting us in the position of acting as crown officers for that work, and yet maintain laboratories at local level providing all of the other functions. It would not be for me to think very much further in terms of major changes certainly to the environmental health and trading standards functions, they are entirely properly based at a local level because they do have other functions as you have heard today from Don Boon and others.

597. As far as the local delivery of food safety issue monitoring is concerned you are broadly content with the status quo?

(*Mr Reynolds*) I am very broadly content that it should remain at local level but I would certainly recognise that there is a need for central government guidance so that the work may be focused, the level of service provision may be identified. That, of course, may very well have a problem which has been dealt with by the representatives of the LGA in terms of what would be ring-fencing or earmarking or, indeed, passporting funds. If you merely ring-fence or earmark there is a problem then that funds could be caught within capping constraints. Through passporting it is for a specific function and in that respect it might very well be that the work of the public analysts could be passported through from central funding.

Chairman: Does Mr Todd want to pursue the question of ring-fencing in this particular area?

Mr Todd: No, I think we have covered it pretty thoroughly with the other witnesses, thank you, and you have made your view very clear.

Mr Collins

598. In your evidence you indicate that you think there is a distinction between the prescribed standards for foodstuffs with controls on lead and arsenic and so forth, and you say there is a lack of such equivalent standards for other areas of microbiological standards. As you will know, neither the Government nor the Advisory Committee on the Microbiological Safety of Food has supported this view, and indeed they have argued that it would not do anything to reduce risk. Would that not, in fact, be closing the stable door? Would it not be better to apply HACCP principles throughout the food chain, that might be a better route to achieve the same objective?

(*Mr Reynolds*) We recognise that, of course, applying HACCP principles throughout the food chain is extremely important and is necessary. Nevertheless, having experience in the courts of trying to establish whether or not a proper standard has been contravened when there is no standard laid down by statute or regulation is immensely difficult. It is relatively easy to put in place the proper standards that have regulatory force that can then be enforced rather than to have to fight to establish a standard against the resistance by individual traders. In economic terms it is probably the better way in which funds can be devoted, to have a number of standards in place. It would not be a question of putting them in of over-regulation, it is simply a question of reinforcing the regulations that are there under the Food Safety Act itself.

Mr Collins: That is very clear, thank you.

Mr Hurst

599. If I may turn to the matter of labelling which you referred to in your Annual Report. I think you found in 1996 12 per cent of samples taken did not so comply. Are you able to distinguish within those those which were potentially hazardous to health and those which were not?

(*Dr Clare*) We do not have in our analysis of statistics the detail to answer that question specifically. I can give you examples of food labelling deficiencies which would affect food safety. Those examples include where no declaration of minimum durability statement is made or a wrong declaration of minimum durability statement is made or wrong storage instructions. There are also statutory examples. Non-statutory ones are that the food may contain an allergin that could provoke a reaction in the individual who eats it. There is the major problem, we believe, that about 40 per cent of food is sold unlabelled. For example, in supermarkets where they pack their own meat products all they have to declare is the name of the food, there is no statutory

[**Mr Hurst** *Cont*]

requirement at the moment for declaration of minimum durability or even storage conditions. These are examples of labelling.

600. I wonder if I can follow that up. If I am now convinced that British beef is the safest in the world and I am proceeding to buy my de-boned beef in a supermarket or indeed in a butcher's shop, how can I exercise my judgment to buy British at the present time as opposed to beef produced in another land? What would indicate that to me at the present time?

(*Dr Clare*) Its origin?

601. Yes. How could I tell where it has come from?

(*Dr Clare*) I think many supermarkets now label its origin. It is either British or Australian. You cannot tell by analysis.

602. But following the labelling question through, am I right in thinking that there is no obligation throughout the sale of meat for the country of origin as opposed to the country of process to be shown upon the product?

(*Dr Clare*) I do not believe there is an obligation.

603. Would you like to comment upon that area? Should that be information within the public domain, that the public should be entitled to know the country of origin?

(*Mr Reynolds*) It is certainly a matter that the public will consider that they should be informed about but as to the precise legal position that is something I would wish to take away and respond to you.

Ms Jones

604. Could I turn to the Public Analysts' Report made last year. On page two of your Annual Report you list 11 food related reports made by the Public Analysts during 1996. Are you able briefly to state the extent of the problems identified and the main conclusions reached in the reports? There are three particular areas I want you to mention. The first one was minced meats contaminated with other products, the sale of ham made from reformed meat and water in meat.

(*Dr Clare*) I can comment on two of those in more detail than the third one. Considering minced meats, our statistics indicate in 1996 13 per cent of minced meats analysed in our laboratories contained species of meat other than those indicated by the name. So, for example, beef would contain pork, lamb would contain beef. In 1997 this was 19 per cent.

605. So that has gone up rather than down?

(*Dr Clare*) Yes, one in five. The significance of this is that really the dietary preferences of people are not being respected by the inclusion, whether it is deliberate or accidental, of these other meats in named minced meats.

606. You may not have this information but what is the percentage relating to pork and lamb? Do you have any figures to indicate what percentage of mince being sold as pork or lamb actually contains beef?

(*Dr Clare*) No, we do not have that data.

607. But there clearly are examples of that?

(*Dr Clare*) Yes. The second one which I can speak in a little more detail about is the water in meat. In particular we have looked at the statistics for cured meat products and where there is more added water than that declared on the label. In 1996 21 per cent of samples analysed contained more added water than was declared on the label. In 1997 that was 13 per cent.

608. Perhaps I am slightly ignorant here. What is the major disadvantage of that? I assume there is some level of shrinkage in the product when it is cooked but is there a specific danger in terms of the level of water?

(*Dr Clare*) There may not be shrinkage necessarily when it is cooked because manufacturers can incorporate water retaining additives.

609. What is the disadvantage?

(*Dr Clare*) The disadvantage is you may be buying water at the price of meat.

610. Yes, but there is no danger attached to that, that is just a problem in terms of what the consumer is getting in relation to what they think they are getting.

(*Mr Reynolds*) That is right. There would not be a danger as such but what springs to my mind is that when I was little and was taken to the seaside at lunchtime the only soggy sandwiches in the sandwich tin were tomato sandwiches. Today, unless one puts some slices of sliced ham through the wringer with kitchen towels either side of it, the ham sandwiches are equally as soggy.

611. The point I am trying to get at it is it is undesirable and perhaps there is an element of cheating the consumer rather than it being identified as a dangerous practice.

(*Mr Reynolds*) That could be the case. There is potentially the consideration that when meat is drier and the surface of the meat is drier then the bacteriological degradation of that surface is going to be very much less because the organisms require a moist environment in which to grow and if the surface of the meat is dry the motile organisms will not be able to move across the surface. If you have a very wet product, if it is wet on the surface, then not only can bacteria grow faster but it can also move across the surface and can contaminate the whole of the surface. There is a difference in terms of safety. The same thing will apply to meats that used to be wrapped.

612. Can I just ask one final question. To bring you back to the mince, and probably I suppose the reformed meat, you gave us some figures about the examples of other species of meat being found in the mince. Are there examples of offals, for instance, being found in the mince? Can you actually identify whether meats are mechanically reclaimed meats that are put into mince?

(*Dr Clare*) I can talk to the MRMs and Mr Reynolds can talk to the offals. With the MRMs, mechanically recovered meats, for beef the machines are quite small and the beef has to be cut up into small sections. During the cutting up it creates bone dust, rather like sawdust, and what we look for is bone dust under the microscope. That is one

[**Ms Jones** *Cont*]
mechanism that is qualitative but it is not quantitative whereby we can identify the presence of mechanically recovered beef.

613. Have there been examples of it?

(*Dr Clare*) We have found them in the past but not many.

614. But in theory somebody could actually be buying, for instance, lamb or pork mince and there is nothing to indicate to them in any way that there is not in fact mechanically reclaimed beef within that?

(*Dr Clare*) Not in the name of the food. You might find it if it was a prepacked food with a list of ingredients.

(*Mr Reynolds*) In terms of the offals we would do a routine search of minced beef, beefburgers, and some more combined products for the presence of specified bovine offal. We do this by conventional histological techniques, separating any suspicious fragment, making microscopic cross-sections of it, staining and examining it by microscopy to identify the characteristic tissues. It is certainly a job which involves a lot of expertise but it is something that my laboratory is routinely undertaking.

615. And the percentage found, any figures?

(*Mr Reynolds*) The percentage found, a few per cent contained non-declared offal. Heart in particular is found quite widely in those that do contain offal. We have not yet found specific bovine offals of significance.

Mr Hayes

616. Can I just return to this issue of mince briefly. Just as an aside, I shall be buying my ham, as I do anyway, from a proper local butcher and not from dodgy injected water affected supermarket ham. That is an aside. In relation to this mince, can I be absolutely clear about this, you are saying that bone dust finds its way into beef mince?

(*Dr Clare*) No, I am saying we have not recently found it.

617. Are you saying that is possible?

(*Dr Clare*) Yes. If MRM were used in mince we would look for the presence of bone dust in order to identify it.

618. Right. So it is feasible then, and has been known, where mechanically reclaimed meat is used, to find its way into mince. How does that impact on the beef on the bone ban?

(*Dr Clare*) We have not seen the legislation for the beef on the bone ban. I am not sure whether there is special reference to MRM in that legislation. Nevertheless, the rationale behind the banning of beef on the bone must surely also apply to beef MRM.

Chairman

619. That is a very interesting point. I wish I had not given my copy of the draft regulations now to our first witnesses or I could answer that question for you. I think that is an important point and we will look at it. I am interested by this question of what you term "food fraud" which clearly shades into food safety at some stage, there is a cross-over where food fraud becomes a safety concern as well. This Committee is quite interested in what the precise remit of the new Food Standards Agency should be and Sally Keeble has been asking a lot of questions about nutrition. I think I share some concern with her about putting subjective matters into the new Agency's work but objective matters clearly belong there very happily. Food fraud then should clearly be a real responsibility for the Food Standards Agency, should it not?

(*Mr Reynolds*) In respect of food fraud, we could, because of the food safety implications of that, revisit what had previously been looked at in this House by the Committee reporting in 1855. That volume runs to some 700 or 800 pages of evidence taken. If I say to you at the time food colours of the day were lead arsenite, copper arsenite, lead chromate, mercury sulphide, lead oxide, those were the colours and the consequential effect upon the consumers was catastrophic.

620. Presumably for the producers as well?

(*Mr Reynolds*) I think the producers were not concerned about the health of their consumers.

621. They lost their customers very quickly.

(*Mr Reynolds*) They lost some of their staff.

Mr Todd

622. The workers in their industry would have been fairly alarmed.

(*Mr Reynolds*) That aside, certainly it is possible in the circumstances of some aspects of food fraud for there to be safety implications. What we are more concerned about today is the concerns over mycotoxins in food, some of which we know are going to be particularly carcinogenic, some are teratogenic, and there are also a number of mycotoxins which are known to have long-term effects upon the health of the human heart. Obviously in that respect nutrition comes in in terms of long-term health of the consumers. We can cast our minds back to the importance of the national loaf and national flour during the last war and subsequently that contained added iron, added calcium, added vitamin B1. The importance of that was enormous in terms of the health of the nation. What we would be concerned about is when there are novel foods and particularly substantial changes in the diet of the nation that there is an overview from the Food Standards Agency of the implications of that, not to tell people what they must eat in any one meal but to look at the overall effect of what may be thought at first to be minor subtle changes in composition which nevertheless may have a long-term and significant effect.

Chairman

623. So you think the Agency should not give prescriptive advice about what people should or should not eat but it should be aware of the health consequences of individual parts of the diet?

(*Mr Reynolds*) The difficulty is that those who would wish no advice to be given would think all advice is prescriptive; those who would wish a lot of

[**Chairman** *Cont*]

advice to be given would feel that one does not go far enough. There has to be a middle ground. The important thing is to look at the overall implications.

Chairman: I think Mr Todd wants to come back to something you raised with us earlier.

Mr Todd

624. Can I refer you to your Annual Report, page 11, where you make reference to the comparisons of the amount of sampling done with the recommendations of the World Health Organisation. On what basis was that recommendation put together, the 2.5 samples per 1,000 of population?

(*Mr Reynolds*) Frankly I do not know the precise details of it, how it was established. I am aware of recommendations in the 1930s which dealt with some three samples per thousand head of population being the proper level of sampling in the United Kingdom. I know that some authorities five or six years ago were achieving two and a half per thousand head of population and have now, because of local authority cutbacks, reduced this sampling to less than one per thousand head of population. There has to be a sufficient level of sampling. This will involve both formal sampling and also surveillance on the basis of which to know whether there are disquieting trends.

625. Okay. The WHO has made this recommendation and you are not sure on what basis they might have made it. Are you aware of international comparisons, how much sampling is done in other countries?

(*Mr Reynolds*) I have seen some evidence of the levels of sampling in some of the Länder in Germany and in some parts of the Netherlands. The difference there, of course, is the way in which food law is enforced. It is advisory rather than criminally or prosecution based. I would prefer to come back with precise details by way of a written response.

626. Could you do that, and also if you are able to establish on what basis the WHO makes its recommendations then I think we would be interested to know.

(*Mr Reynolds*) I can do that.

(*Dr Clare*) Three years ago the EC did an inspection visit on the UK food law enforcement system and there they referred to the 2.5 per thousand head of population that the WHO had recommended. They referred to that in their report. We can come back with firmer details.

627. I am interested to know why 2.5 rather than three or one and a half or whatever. It is important not just to pluck a figure out of the air, and I am sure they have not done.

(*Mr Reynolds*) It is important to emphasise, of course, that once one has got a sample the repertoire of analysis that is performed on it then has to be taken into account. It would be a false economy if one was to say that if you perform three analyses on a food therefore you count it as three samples. Certainly from what I have seen done in the Wiesbaden Laboratories at Hesse the numbers of determinations on some samples was as many 70 parameters determined. On some samples we may make as many as 20 parameter measurements in order to complete what we think would be a proper level of examination.

Ms Keeble

628. I am most grateful for that. I did not understand all of the terminology I have to say but it sounds as if what you were saying was very similar to what Safeway said in terms of concern over the carcinogenic consequence of certain types of diet.

(*Mr Reynolds*) Yes.

629. I wonder if you could say a bit more clearly perhaps what you would expect to be in or out of the Food Standards Agency which is clearly going to be a matter of popular debate. From what you say it sounds as if the contents of processed food, for example whether your baked beans have got enough fibre in them and this, that and the other, should be in and salt and sugar, but you also think there should be identification of where a particular diet has got particular risks to health, for example there is this thing about red meat and cancer, if there are particular agents in the meat which could cause cancer over a long time. Are you then saying that that should be identified and that should be labelled or are you saying that the Food Standards Agency should also produce leaflets giving advice on diet which we have always understood would be better done by the public health area? Could you just say exactly where you think the departmental and agency boundaries should begin and end and if my understanding is correct?

(*Mr Reynolds*) I think certainly when it comes to guidance over diet, probably the earlier age at which one can influence consumers the better. It may very well be that what many of us were fortunate enough to learn from mothers and grandmothers about proper diet is something that is now a thing of the past. Maybe to an extent aspects of diets should be taught in schools. I would not expect the Agency to be prescriptive but I would expect it to be informative. If it sees that related to a diet where the only meat consumed is red meat there is going to be a problem and this should be capable of being identified.

630. That is the role of the Chief Medical Officer currently, is it not?

(*Mr Reynolds*) It might very well be. I see no reason why within the concept of an all-embracing Food Standards Agency it should not at least have the opportunity to provide a means of informing the consumers at large.

631. Do you think they should do the research? Sometimes risks about food safety come and go and it seems to be sometimes fashion rather than safety. Should the Agency also have the lead responsibility for organising the research into what is safe for diet and nutrition, not just is it safe or is it going to poison people?

(*Mr Reynolds*) I would not see it as being prescriptive in that it should lay down what research workers should deal with. It should keep a careful overview of what research is being undertaken in the academic as well as other areas. If they perceive that

[**Ms Keeble** *Cont*]

there are serious deficiencies then they should attempt to fill them by promoting research in areas that obviously have been overlooked.

Ms Keeble: Thank you.

Chairman

632. One last small question. I was very struck by your evidence where you talk about the need for statutory microbiological standards or guidelines where you say these do not exist, for example the lead and arsenic content of foodstuffs. What priority do you attach to that recommendation? Is it a matter of great importance to you?

(*Mr Reynolds*) When it comes to microbiological standards clearly there can be an implication on microbiological standards for milk, for meat, for shellfish, etc. It would be possible if there were different standards throughout different parts of the Community, and I am aware through serving on the Committee for European Standardisation on food analysis that there are apparently different standards that are thought about in France and in this country. In order to have a level playing field we need to have similar standards for acceptance by the major companies as to what is safe to be traded. It is better if everyone is looking for a level playing field to have standards that are, if not laid down in regulation, certainly in codes of practice.

633. That would be essential, would it not, in a European supermarket?

(*Mr Reynolds*) Yes.

(*Dr Clare*) The Institute of Food Science and Technology, and the PHLS, have published papers proposing various standards and at the moment people are using them as guides. These standards are already floating about and are being quoted. What we are advocating in our memorandum is that they should be placed on statute or in a code of practice.

634. The Food Standards Agency should be lobbying in Europe for a common set of standards?

(*Dr Clare*) I think the Food Standards Agency has a major role to play in giving authenticity to microbiological standards for food.

635. Gentlemen, it has been a very interesting session, I am very grateful to you. I am sorry that we kept you waiting by the pressing issues of the moment. Despite talking about food safety at such length I still feel hungry when I get to this time, I suppose you do too. We are very grateful to you both, thank you very much indeed.

(*Mr Reynolds*) We will prepare answers to those matters and submit additional comments if those would be of assistance.

Chairman: They would indeed, thank you very much.

Supplementary Memorandum submitted to the Association of Public Analysts (C81)

BACKGROUND

These comments arise from the oral evidence given by Mr Braxton Reynolds and Dr Peter Clare of the Association on 16 December 1997.

Further evidence was requested on:

- the precise legal requirements relating to the labelling of meat by country of origin (Qq 600–603); and
- the basis on which the WHO makes its recommendations both generally and with particular reference to sampling (Qq 624–626)

THE LABELLING OF MEAT BY COUNTRY OF ORIGIN

The Food Labelling Regulations 1996 prescribe how food should be labelled. Regulation 5 requires that food shall be marked with the particulars of the place of origin of the food if failure to give such particulars might mislead as to true origin of the food. Regulation 23 relaxes this requirement for foods which are not prepacked, that is those foods sold loose or similar state.

The Association interprets the application of this regulation as meaning that it is a voluntary matter for the meat or meat product retailer or manufacturer whether or not to state the origin of a meat.

However the Association would support the following:

(1) that the origin and history of meat and meat products be declared at the point of sale;

(2) that it should be an offence to sell meat and meat products without such an indication of origin and history.

Where meat and meat products are sold without knowledge of the origin the description "from country of unknown origin" could be applied.

THE WORLD HEALTH ORGANISATION RECOMMENDATIONS FOR SAMPLING

The Association has quoted the sampling rate of 2.5 samples per thousand head of population and encloses a copy of the report entitled "Results of the Evaluation by the European Commission Foodstuffs Assessment Team of the United Kingdom Food Control System" dated 30.01/03.02 1995 [*not printed*].

We draw attention to page 11 of this report which cites the WHO figure of 2.5 samples per thousand head of population. We have enquired of officials of the WHO and Commission for the origin of this figure and have to report that we yet await a response.

OTHER ISSUES

Radical Changes in Food Law Enforcement

Food law is enforced in the main at a Local Authority level. A necessary part of this enforcement involves both surveillance of food and the assessment of its authenticity. And yet these activities are ever increasingly undertaken by central government through the programmes organised by the scientists of MAFF. In the absence of co-ordinated planning between Central and Local Government, this activity of the MAFF represents unnecessary duplication of effort and consequentially the diversion of valuable resources without the prospect of effective enforcement. When adverse results are found trial through the Press may be the only outcome of such surveillance. A radical change would be to therefore revert to maintaining the activities of Local Authorities, to stop non statutory surveillance by MAFF and to direct the funds so that appropriate statutory enforcement can be undertaken. Examples of such duplication are:

(a) investigating the authenticity of intoxicating spirits
(b) the determination of extraneous water in cured meat products
(c) the assessment of the fresh or previously frozen nature of poultry
(d) examining apple juice for patulin, a mould metabolite
(e) investigating the authenticity of scampi
(f) determining the amounts of plasticizers (phthalates) in infant formula feed

10 January 1998

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HOUSE OF COMMONS SESSION 1997–98

AGRICULTURE COMMITTEE

FOOD SAFETY

MINUTES OF EVIDENCE

Tuesday 27 January 1998

NATIONAL FARMERS' UNION OF ENGLAND AND WALES

Sir David Naish, Mr Hugh Oliver-Bellasis, Mr Ian Gardiner,
Ms Tessa Crago and Dr Vernon Barber

FEDERATION OF FRESH MEAT WHOLESALERS

Mr Richard Cracknell and Mr Ashley Bowes

JOINT HOSPITALITY INDUSTRY CONGRESS

Mr Jeremy Logie, Mr Tom Miller, Mr Clive Wadey
and Mr John Dyson

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TUESDAY 27 JANUARY 1998

Members present:

Mr Peter Luff, in the Chair

Mr Tim Collins
Mr Andrew George
Mr John Hayes
Ms Fiona Jones
Ms Sally Keeble
Mrs Diana Organ
Mr Paul Marsden
Mr Austin Mitchell

Memorandum submitted by the National Farmers' Union of England and Wales (C53)

SUMMARY OF RECOMMENDATIONS

MICROBIOLOGICAL HAZARDS AND THE FARM

Development of simple methods that are cheap and can easily be used in a farm environment for testing for specified bacterial species.

Increased emphasis on the ecology and epidemiology of known and potentially pathogenic bacteria and viruses. This basic information could be used to inform activities centred on reducing and/or eliminating the hazardous bacteria from livestock. It might also be used to attempt to identify microorganisms that will produce health problems in the future.

Increased efforts to develop cheap and effective vaccines against the common disease-causing bacteria outlined in this text.

INSECTICIDES, HERBICIDES, FUNGICIDES, AND VETERINARY MEDICINES ON THE FARM

More publicity for the results of the VMD and MAFF residue surveillance programmes is required. This should lead to an increase in consumer confidence if properly presented.

Increased research into the environmental and health effects of insecticides, herbicides, fungicides, etc. and methods of optimising their use.

TRANSPORT OF ANIMALS

Government takes steps to improve industry awareness of the need to ensure lorry design and journey conditions take account not only of the need to reduce stress but also to reduce faecal spread of bacteria.

BIOTECHNOLOGY

Further government research on the development of replacement marker genes that would be more acceptable to the public and on the risks inherent in using antibiotic marker genes in GM plants.

New regulations to apply a ten year programme of post-release monitoring to commercially grown GM crops in the UK. This programme needs to be government controlled, and perhaps funded (ie it needs to be independent of the seed supplier). The results of the programme should form part of a review process that follows the approval of all newly introduced GM crops.

Government support for the introduction of industry-developed codes of practice for growing GM crops in the UK.

Government pressure for appropriate GM labelling regulations of both foods and animal feeding stuffs at international, European, and national levels.

The cost of printing these Minutes of Evidence is estimated by The Stationery Office at £1,355.

NUTRITION AND THE HOME

Nutritional and food safety public educational programmes need to be reviewed and/or expanded to make sure that the target audiences are receiving the required health messages.

Educational programmes in primary and secondary schools need revision so that core curriculum contains sufficient domestic science and nutrition training to alert pupils to the hazards of inadequate food preparation.

INTRODUCTION

The NFU welcomes the opportunity to comment on current issues of concern relating to food safety. Our response covers primarily food safety issues of direct relevance to farmers and growers. Nevertheless, we are concerned that the entire food chain, down to and including the consumer, takes every precaution to ensure the safety of the nation's food.

The NFU, as well as providing advice and assistance to its members, has been at the forefront of farming innovation. For example, it has overseen the development and introduction of numerous codes of practice to improve the safety and effectiveness of farm activities. It has also provided varied documentation to assist in the education of farmers and growers on changes in regulations and farm practices, and in similar activities. Two notable initiatives have been the development, in association with industry partners, of several farm assurance schemes. Another joint initiative has been the production of codes of practices relating to the provision of information on genetically modified crops in preparation for their eventual commecial growing in the UK.

Despite these initiatives there continue to be areas of farm activity with which food safety concerns are associated. The first of these relates to the natural presence in farm animals of bacteria and other organisms that can cause human disease if still present in meat derived from them. Other concerns centre on the possible contamination of food with residues of the chemicals used in the agronomy of crops or disease control in livestock. The marketing and transport of farm animals has welfare considerations but can also lead to food safety concerns. The likely introduction of biotechnological innovation into farming is an area that has continued to produce public concern.

MICROBIOLOGICAL HAZARDS AND THE FARM

Many types of bacteria are normal inhabitants of the digestive tracts of humans and animals and do not cause disease. Nevertheless, the continuing concerns about the dangerous bacterial serotype *Escherichia coli* 0157 have put bacterial contamination high on the food safety agenda. However, many other bacterial species can cause a variety of widespread human and animal infections. The most common causes of gastrointestinal infections in humans are thought to be *Campylobacter* and *Salmonella* with approximately 45,000 and 30,000 laboratory confirmed cases respectively per year caused by these bacteria. These numbers have increased in the last decade, although partly because of more frequent and accurate testing and reporting. The actual figures are probably very much larger than those reported.

It must not be forgotten that there are many other bacterial and viral causes of food poisoning. Examples of these are ones caused by bacteria in the genera *Clostridium* (associated with cattle, sheep and pigs), *Listeria* (cattle, pigs and poultry), *Shigella* (horses/foals), *Staphylococcus* (cattle and pigs), *Vibrio* (pigs—associated with dysentery), and *Yersinia* (not technically a zoonose as it is spread by human to human contact), and viruses. Many of these are natural inhabits of the digestive tract of the mentioned livestock, or are found in animals not used for farming and so are present in the environment. Consequently, complete elimination of them from livestock is very difficult and would, indeed, be pointless unless animals were kept in sterile sealed conditions to the detriment of their welfare. The main approaches to dealing with the problem have therefore been to try to reduce the levels of harmful organisms in livestock, or to develop vaccines to protect the animals against infection (and of course incidentally protect humans as well).

E. coli 0157 has been of particular concern because of the relatively high mortality rate with this infection and because of the complication of acute kidney failure. In contrast to *Campylobacter* and *Salmonella* the number of reported cases in the UK is still increasing. The incidence of livestock infection is unknown, although a recent study in the UK showed that 0.66 per cent of cattle carried the bacterium (as estimated from faecal samples) and that the incidence in cattle carcasses was 0.47 per cent. However, other studies have shown that excretion of the bacterium is intermittent and so the actual incidence of the bacterium in cattle is probably higher than the reported one. Studies have also shown that *E. coli* 0157 can survive in the environment for many months. It can also survive refrigerator temperatures but is heat sensitive and killed by adequate cooking.

The recognition of the increasing hazard of *E. coli* 0157 has had an immediate impact on farms. The NFU has been ugently revising its code of practice for farm visits by the public. There is also a risk to the farmer.

Another worry is the world-wide increase of bacterial antibiotic resistance. The use of "antibiotics" in animal feed in the UK, as dietary enhancers, is gradually reducing. The practice is no longer used in the UK for cattle, is only used for weaning but not adult pigs, but is still used for some poultry. However, antibiotics have essential prophylactic and therapeutic uses, and even organic farmers are permitted to use them in specified circumstances.

The Veterinary Medicines Directorate operates two complementary surveillance programmes that play a central role in ensuring that the consumer is protected against potentially harmful residues of veterinary medicines, including antibiotics. The first is the National Surveillance Scheme for residues in meat, which is a statutory programme that implements EU legislation. The costs of this are met by charges levied on slaughterhouse operators. The second is a MAFF funded non-statutory programme, which supplements and expands the statutory programme. The results of these surveillance programmes are reassuring, and show that residues of veterinary medicines occur only very occasionally and at such low concentrations that they rarely pose a health hazard to consumers.

With this background the NFU considers that the following research activities are needed:

— Increased emphasis on the ecology and epidemiology of known and potentially pathogenic bacteria and viruses. This basic information could be used to inform activities centred on reducing and/or eliminating the hazardous bacteria from livestock. It might also be used to identify microorganisms that will produce health problems in the future.

— Increased efforts to develop cheap and effective vaccines against the common disease-causing bacteria outlined in this text.

Insecticides, Herbicides, Fungicides, and Veterinary Medicines on the Farm

There is continuing public concern about the use of insecticides, herbicides, fungicides, pharmaceutical products, and other substances on the farm, and the possibility that residues of these substances may get into the food chain. Codes of practices for the use of farm chemicals and veterinary products form the basis for their responsible utilisation on the farm. These, together with a continuing residue surveillance programme undertaken by MAFF, show that there is little cause for concern in the UK. This view was recently supported in the WCRF/AICR report entitled, "Food, Nutrition and the Prevention of Cancer. A Global Perspective".

The NFU continually works to improve the level of record keeping on farms, including information on the location, level, and type of chemical used for crop or livestock application. Contracts signed between some farmers and supermarket chains already require detailed record keeping. This requirement is likely to become standard as farm assurance programmes, which necessitate more rigorous record keeping regimes, are adopted by the majority of farmers.

Even with these improvements in farm practices there will still be some areas where lack of information will continue to restrict the ability of the farmer to determine risk. For example, the replacement of organophosphates by synthetic pyrethroid compounds in sheep dips can lead to a high mortality rate in organisms that live in streams that received the chemical. Overall information on the environmental and potential health hazards of insecticides such as organophosphates and pyrethroids, helminthicides, as well as fungicides and other compounds, could be improved. Indeed, producer awareness of the codes of practice for the use and disposal of such substances is not always satisfactory.

Another area where there is concern is in the constituents of livestock feeding stuffs. There are still worries that unsuitable constituents may be contained in such food. A more specific labelling requirement would assist in alleviating such fears.

With this background the NFU recommends:

— More publicity for the results of the VMD and MAFF residue surveillance programmes is required. This should lead to an increase in consumer confidence if properly presented.

— Increased research into the environmental and health effects of insecticides, herbicides, fungicides, etc., and methods of reducing their use.

Transport of Animals

The NFU has always considered the humane transport of animals to be essential. There are strict regulations in place, but ultimately the farmer has to take some responsibility in ensuring that the haulier who transports his/her livestock handles them properly.

The NFU recommends that:

— Government takes steps to improve industry awareness of the need to ensure lorry design and journey conditions take account not only of the need to reduce stress but also to reduce the faecal spread of bacteria.

BIOTECHNOLOGY

The NFU welcomes the responsible introduction of biotechnology into farming. The potential benefits are substantial and include optimising production efficiency and the marketability of existing products, the opening of new market opportunities, environmental benefits, assistance in food sufficiency in developing and underdeveloped countries, and the production of pharmaceutical and nutritional products.

The uses of Genetically Modified (GM) livestock is a more difficult issue. Many consumers have indicated their unwillingness to buy meat derived from such animals. However, that is not to say that GM livestock do not have a positive role to play. For example, α_1-antitrypsin, which is extracted from the milk of a herd of GM sheep as a possible treatment for cystic fibrosis, is being developed by the biotechnology company PPL Therapeutics in Edinburgh. Other human benefits of GM livestock may include organ transplants—a process called xenotransplantation. Bacterial, viral and parasitic diseases may in future be partly controlled by developing GM livestock that have greater disease resistance built into their genetic make-up. This would be of real benefit to animal health and welfare.

The NFU has developed specific policies to address some of the concerns over the use of biotechnology that have been raised by others. For example, in April 1997 the NFU, in association with other industry organisations presented two codes of practice. The first is a joint one between BSPB, NFU, and UKASTA (Appendix 1 [not printed]). The second is solely a NFU one (Appendix 2 [not printed]). Both relate to the provision of appropriate information in the event of genetically modified crops being grown in the UK. Both codes make the assumption that seeds and crops should be segregated and appropriately labelled so that they could be clearly identified throughout the human and animal food chains. Since then the BAA, BSBSPA, BSPB, NFU, and UKASTA have been able to agree on a joint document on GM herbicide tolerant crops for submission to MAFF (Appendix 3 [not printed]). There is also agreement that appropriate labelling should accompany all foods that contain viable GM material. Such labelling should also apply to animal feedstuffs.

The NFU fully supports the present EU and national approval system for Genetically Modified Organisms (GMOs). The use of scientific criteria for approval is an essential part of the process. The only improvements necessary may be to extend the consumer representation on various relevant committees (ie ACRE, ACNFP), and improve information transfer between the committees and with the general public. The situation in the EU is less satisfactory but is improving.

Two concerns that have been specifically flagged up by the NFU are the need for post-release monitoring of GM crops and their possible environmental effects, and the inclusion of antibiotic resistance marker genes in some GMOs. The inclusion of the latter marker genes is unwise and produces unnecessary consumer concern. However, the NFU does realise that there are differences in the marker genes because of varied promoter sequences. These DNA segments determine whether there is likely to be any risk of the active gene being transferred to microbes in animal or human digestive systems.

The requirement for post-release monitoring is clear when one considers the possibility of herbicide tolerant or pesticide-containing GM plants affecting weeds and insects in the environment. Government funded or controlled post-release monitoring should accompany any widespread growing of GM plants in the UK. The monitoring should be for an extended period (say 10 years). The results of the studies should be used as part of a review of the growing licence for GM plants that should form part of the approval process.

The NFU considers that the following actions are needed:

- Further government research on the development of replacement marker genes that would be more acceptable to the public and on the risks inherent in using antibiotic resistant marker genes in GM plants.
- New regulations to apply a 10 year programme of post-release monitoring to commercially grown GM crops in the UK. This programme needs to be government controlled, and perhaps funded (ie it needs to be independent of the seed supplier). The results of the programme should form part of a review process that follows the approval of all newly introduced GM crops.
- Government support for the introduction of industry developed codes of practice for growing GM crops in the UK.
- Government pressure for appropriate GM labelling regulations of both foods and animal feeding stuffs at international, European, and national levels.

NUTRITION AND THE HOME

One of the best routes to maintaining health is to eat a properly balanced diet, reduce known health risks such as smoking, and take sufficient exercise. The old maxim of "everything in moderation" is a good policy. The consequences of the reduction in consumption of red meat (mainly beef, lamb, and pork), and the increase in vegetarianism is an example of a change that is not necessarily for the good as far as public health is concerned. There is evidence that an increase in vegetarianism has led to an increase in anaemia caused by iron and vitamin B_{12} deficiency.

The lack of adequate domestic science and nutritional information in the curriculum in the schools in recent years has meant that there is a relative lack of knowledge of standard hygiene and cooking practices. The importance of this is emphasised by United States studies which show that a high proportion of food borne disease emanates from lack of proper handling, storage, and cooking in the home. The two most obvious examples are the lack of knowledge of the practices needed to avoid the cross contamination of food, and the need for high enough cooking temperatures to kill potentially harmful bacteria.

The following public education programme would be of health benefit:

- Nutritional and food safety public educational programmes need to be reviewed and/or expanded to make sure that the target audiences are receiving the required health messages.
- Educational programmes in primary and secondary schools need revision so that core curriculum contains sufficient domestic science and nutrition training to alert pupils to the hazards of inadequate food preparation.

GLOSSARY

AICR—American Institute of Cancer Research.

ACNFP—Advisory Committee on Novel Foods and Processes.

ACRE—Advisory Committee on Releases to the Environment.

BAA—British Agrochemicals Association.

BSBSPA—British Sugar Beet Seed Producers Association.

BSPB—British Society of Plant Breeders.

MAFF—Ministry of Agriculture, Fisheries and Food.

NFU—National Farmers' Union.

UKASTA—United Kingdom Agricultural Supply Trade Association.

WCRF—World Cancer Research Foundation.

October 1997

Examination of Witnesses

Sir David Naish, President, National Farmers' Union of England and Wales (NFU), Mr Hugh Oliver-Bellasis, Chairman, NFU Food Policy Group, Mr Ian Gardiner, Director of Policy, Ms Tessa Crago, Head of Food and Marketing Department, and Dr Vernon Barber, Food Science Adviser, National Farmers' Union of England and Wales, examined.

Chairman

636. Sir David, before I invite you to introduce your team, may I welcome you to this Committee for your last appearance as President of the NFU. It is something of an astounding occasion for you. I suspect that few individuals in the realm have given evidence to Select Committees more than you have. We are grateful to you, once again, for coming before us. We are grateful also for the written evidence you have provided us with, but it is right that we should also pay tribute to you on this occasion, for the excellent stewardship you have shown in the NFU over a particularly difficult and troublesome period. So welcome. I hope today will not be too difficult and troublesome for you. Sir David, may I invite you to introduce your team.

(*Sir David Naish*) Thank you very much, Chairman. Thank you for those kind remarks. Mr Holbeach, our Parliamentary Adviser, was trying to work out how many such appearances I have made and it certainly runs into a considerable number. May I introduce, starting from the left, Ms Tessa Crago, who heads up our Food and Marketing Department in the National Farmers' Union; Mr Ian Gardiner, our Policy Adviser; Mr Hugh Oliver-Bellasis, a farmer from Hampshire, who heads up the Food Policy Committee we have in the NFU; and Dr Vernon Barber, one of our Specialist Advisers within the Department.

637. May I ask you, right at the top, a question about Farm Assurance Schemes and licensing of livestock producers. We will be hearing evidence later this morning from the Federation of Fresh Meat Wholesalers. They said in their evidence to us: "It is a serious anomaly that all the links in the meat chain are licensed or inspected except livestock producers. We believe that in view of the importance now attached to food safety and producer resistance to farm assurance"—I emphasise that point, producer resistance to farm assurance—"that livestock producers should operate under licence." I wonder what comments you would make on those observations.

(*Sir David Naish*) My friends from the Federation of Fresh Meat Wholesalers, because they are sitting behind me, I have no hesitation in saying that I believe that a voluntary route is much better than a compulsory one. Of course, I would not argue with one of the points that they appear to have made in the evidence to you, that there is a great deal of inspection on farms. We are governed by many existing codes of practice. We certainly are restricted—if we even wanted to digress in that way—by the codes that are accepted in animal welfare terms. I do believe—and I would dispute very strongly—that there is now a willingness amongst farmers to recognise the importance of farm assurance. The schemes which the NFU has developed in other sectors—to start with, in produce and combinable crops—are moving forward at a pace. We are well advanced with the dairy scheme. There is, in existence, a very excellent scheme in the pig sector. There is the function of British Pigs, which is developing at a pace with some 60 and 70 per cent of the pigs now going through about 80 per cent of the producers. With farm assured British beef and lamb, certainly one would be quite right in saying that this has been slow to take off; but, in fact, with present experience, farmers recognise that this is what, in many ways, is going to give a huge cash increase. So although, in some cases, some of our customers do pay for this, which I greatly appreciate, in fact it is going to give assurance to the market place—never mind the assurance of standards of production—so I do not think licensing is necessary. It would be much better if we did proceed with the voluntary route.

Mr George

638. Before we look at the written evidence and questions which arise from that, clearly since you submitted your paper, the Government has published its White Paper on the Food Standards Agency. Before we get into questions on your paper, I wondered if I could have your views on a number of matters which arise from the publishing of that paper. This, in particular, relates to the proposed powers of the Agency to intervene on farms; particularly, the proposed powers of the Agency to intervene independently of Agriculture Departments in food safety control and surveillance matters on farms. Has the NFU had an opportunity, as a body, to consider these proposals; and whether it has a view on that?

(*Sir David Naish*) Certainly our original readings of the Food Standards Agency White Paper, this is one of the issues which we wish to address with the Departments that have put out the White Paper, because it is not quite clear what their reserved powers are from the paper itself. Having said that, the Agency role of HSE, MAFF itself and local authorities, will all obviously be out there on the farms and the regions, as they always have been, on food standards and food safety. Indeed, the role, as we understand it, of the Agency, will be to ensure that they make sure that those people deliver a common standard all the way through. You will know, Mr George, that they have assumed the responsibility—if the paper goes through in its entirety—of the milk and dairy hygiene regulations. All those other Departments which already exist will be there. The Agency itself, as we read the paper, will not have staff itself to put them on it. However, it will have reserved powers to make sure that people do examine the issues of the day.

639. In summary, you have nothing to fear from the proposal that the Agency can intervene independently of MAFF?

[**Mr George** *Cont*]

(*Mr Gardiner*) We would put it another way. There are lots of questions which arise in the way that the Food Standards Agency will operate and its relationship with existing agencies. The outline, which has been presented in the White Paper, makes it fairly clear that in the first case the Food Standards Agency would act as a monitor of the existing regulators and would not put new people on the farms. I do not think we would be supporting new people on farms. The current agencies work well. What could be improved is the promulgation of their results, their relationships with the general public. I am sure that the Food Standards Agency, through issuing annual reports and so on, could help in that. There is a lot we want to explore but we are not approaching the Food Standards Agency with fear. We are approaching it in a spirit of co-operation, believing that it will lead to a better relationship between the British public and Government. It is important for us, the British public, and the suppliers of their food funds.

640. Turning then to the proposed retention of responsibilities for evaluation of veterinary medicines and pesticides with the VMD and the PSD, subject to a number of powers which, of course, it is proposed the Food Standards Agency will have, including an effective veto on the authorisation of pesticides and veterinary medicines on food safety grounds; is that veto in any way, a subject on which the NFU has a concern or a view expressed?

(*Sir David Naish*) We certainly believed, when we saw Professor James' original proposals, that it would be wrong to split up the powers of the PSD and the VMD. This is because it is important that so many other issues are embraced when these licensing authorities are there. For example, one needs to have a recognition of the environmental pluses or minuses when one is looking at a spray chemical, as well as the production in food safety issues. Similarly, in animal welfare terms, in VMD, one needs to make sure that there is a single body looking at the whole. So, from our point of view, we are delighted that the White Paper decided to keep them as separate bodies; so that the entire industry and the Food Standards Agency have a highly professional body to go to, in the full breadth of the issues which it faces.

641. What kind of precautionary action would be recommended or accepted? Clearly, on the issue of the use of pesticides and veterinary medicines, there is often a fear or worry about the impact of a particular pesticide. Lindane has been one which has been quoted in the past. Whilst those tests are going on, should the Agency have a power to withdraw it, subject to evidence being made available on its safety, or should it be the other way round?

(*Mr Oliver-Bellasis*) I think the issue is one of monitoring. The companies who ask for these products to be licensed have to provide a very significant amount of data which are judged against sets of criteria on safety, environment product, efficacy, and so on. They have to provide that to the Pesticide Safety Division. They have to do a number of checks actually to gain that licence. The important issue is post-monitoring. That is an issue which I have no doubt the Food Standards Agency would wish to look at with both the PSD and also the VMD. There are questions as to whether those environmental standards need updating and at what time period for that monitoring to be effective.

642. Thank you. Finally, there was a proposal in the White Paper to establish an Advisory Committee on Animal Foodstuffs, to advise the Agency and the Agriculture Departments. Has the NFU a view on that? What about its make-up and what should its role be?

(*Sir David Naish*) I would like to say I am absolutely delighted. It is indeed something which throughout my NFU career we have been asking for; such a body to make sure that we knew what ingredients, contaminants, additives were within feed; and that there would be a body properly put together to look at that and we could make reference to it as primary producers. I am absolutely delighted.

643. Thank you very much. That is very helpful. Largely, it is a broad welcome?

(*Sir David Naish*) A broad welcome. We have reservations and things we shall want to discuss with the responsible Ministers who have put up the White Paper. We shall be putting in our submission to them when we have had a chance to deal with them in more detail.

Mr George: Thank you very much.

Mr Mitchell

644. Since food safety is obviously relevant to farms, and since it is going to have a new Agency which is going to have some power to intervene in farms and it is going to be regulated by the regulators of farms, the Government having decided that it should be financed by a levy initially on that food industry, should that levy also extend to the farmers?

(*Sir David Naish*) I said to Mr George that I had reservations. One of my reservations is the very point that Mr Mitchell makes to me.

645. You would not want to pay for it?

(*Sir David Naish*) One of the unfortunate things, if I may not answer you directly, Mr Mitchell, is that because of the highly competitive nature both of the industry and of the high street, any costs which go into the industry tend to go back in the chain rather than forward. So certainly I would not be volunteering to pay for it on behalf of the farmers, and I do not believe it is the right thing to do. I am extremely cautious that even if it were levied as a tax on food—which effectively it is if the charge is put on to the industry—the poor would pay just as much as the well-off for that particular tax to be applied. The dangers of that going back up the chain to the primary producer, rather than as a further reduction in the end price, are something which I think are significant and must be addressed.

646. That is true. But what you are saying there is that farmers should not pay or that nobody should pay?

(*Sir David Naish*) I am saying that under these circumstances, I believe that if it is in the interests of public health, that this is a legitimate charge on the public purse.

[Mr Mitchell *Cont*]

647. You mentioned nutrition in your evidence. There has been an argument as to whether the Agency should have a role in respect of nutrition. You seem to want it to offer advice on nutrition, provided that the advice is for us to eat more meat!

(*Sir David Naish*) I did not say that.

648. Well, there is an attack on vegetarianism there, is there not? Do you want it to have a nutritional role?

(*Sir David Naish*) Let me ask Dr Barber.

(*Dr Barber*) It is perfectly reasonable for it to have a nutritional role. It depends on what role you are talking about. The fact about eating more meat, the simple fact is that a more balanced diet is what we should be aiming towards—not necessarily more meat or less meat but a balanced diet -and protein in meat forms a perfectly reasonable part of a diet and it has done for a millennium. It is not a new idea after all. We do not especially advocate one sort of food over another. What we do say is that there is sensible advice to be given and simple advice like in preparing food. Just a simple matter of cooking properly would reduce food poisoning considerably.

649. So the Food Standards Agency should offer that nutritional advice?

(*Dr Barber*) It would be a useful function, yes.

Ms Keeble

650. Quite a number of measures have been put in place to make sure that animals entering the food chain are as clean as possible. The MHS's Clean Livestock Policy is central to this. Between July and November 1997 their figures show that 2.7 per cent of cattle at slaughterhouses were classified as dirty. That is two and a half thousand. Just over 5,000 were rejected altogether. Is the situation improving?

(*Sir David Naish*) I believe there is a lot of evidence that the situation is improving. It has not actually been monitored over consistent bad weather or consistent adverse conditions. We must take into account the effect of, for instance, over the last fortnight or three weeks, when we have had this consistent rain. Obviously sheep are having to dry off before they go into the slaughterhouses and it is quite a problem to know how serious it is. One must be careful too of the numbers. Those are absolutely factual and I am in no way disputing them, but one must accept that of 5,000 which were rejected, the majority would be re-presented, having been properly washed. I understand that the actual amount which have been taken out of the system altogether is only 159 in that period of time. It is a matter of the presentation. Now, no way would I wish to go on record to your Committee, sir, as not wanting, from a consumer point of view, to present clean livestock. However, I do believe it is improving. I would also point out that there are considerable difficulties at times—particularly with animals brought in from the hills or outdoor conditions who are not used to being confined inside—to getting them 100 per cent clean overnight. However, we are moving in that direction fast and encouraged by what is happening.

651. Who is actually responsible for collecting the data you suggest, relating the cleanliness of the animals to the weather conditions? I do see in your report that you suggest quite frequently that the Government should undertake certain research. Do you think that the Meat Hygiene Service should? You should? Who should?

(*Sir David Naish*) I am very satisfied that the Meat Hygiene Service statistics are accurate and that they are collecting them. It is a matter of interpretation of those figures.

652. In terms of the relationship, which is perfectly valid, which you make between the weather conditions and the cleanliness of an animal, do you think that the Meat Hygiene Service should look more closely at the figures, so that we get a much clearer impression as to what is causing the problem? Or do you think somebody else should be responsible for collecting that data and, if so, who?

(*Mr Oliver-Bellasis*) It is perfectly reasonable that the Meat Hygiene Service should do it. If there is a need to produce the figures in a different way—for instance, as Sir David has said, to show that only 159 out of that number have actually had to be destroyed—then there is some reason to ask that question.

653. Thank you. Could you say what the impact of the Meat Hygiene Service has been on farmers and hauliers—I suppose, in particular, farmers since they are your members.

(*Mr Gardiner*) It would be fair to say that we have had to wait rather a long time for this code of practice to come out of the Meat Hygiene Service and we have been pressing for it. They have been very active, in association with us, in taking their soundings in front of the farming community, both through meetings and advertisement and publication. The figures actually show that there has been a pretty decent response. Of course, you do not know exactly what the position was before. Perhaps our colleagues from the meat industry would be able to comment on their viewpoint later. I think we are making good progress, but we have to be a little bit cautious with the next set of figures, which are going to come out of seasonally the most difficult period of the year. Even though we are committed to this, nobody should under-estimate the fact that it is a further cost to the management burden on British farmers. We are not criticising it. We just have to make that point.

654. On a farm I visited during the weekend, the point was made by the farmer that quite a number of the practices that make clean animals were also good in terms of animal husbandry and farming. This was a dairy farm. It was obviously important that the cows were able to produce milk. Is that generally the approach that farmers would take; or would they see it sometimes, as you have said, as a restrictive, rather onerous burden?

(*Mr Oliver-Bellasis*) The issue is the difference between the way in which we would look after cattle in the lowlands, and the way in which cattle would be tended in the uplands. The two systems are somewhat different and require different parameters for those cattle to be taken in off the hills, dried out and got to be clean; whereas in the lowlands it is significantly easier because we tend to over-winter

[**Ms Keeble** *Cont*]

inside. This is because the pastures are not capable of having them on those pastures during the whole of the winter.

655. Would the same principles apply to other areas of farming? For example, to sheep or pigs?

(*Mr Oliver-Bellasis*) Certainly to sheep, yes.

656. What happens to the animals rejected for slaughter? You mentioned that some 159 of them were destroyed. The rest would be re-presented, would they?

(*Mr Gardiner*) Again, perhaps our colleagues in the meat industry could comment more. As I gather, a lot of them are cleaned, dried—drying is an important problem, particularly for sheep—and re-presented the next day or after the weekend. Then they come through in a higher category.

657. Thank you. I have a couple of supplementary questions and I will ask them all at once. What steps are the NFU undertaking to assist its members in minimising faecal contamination of livestock on farms? I see in your evidence that you seem to suggest that *E. coli* might be more of a difficulty in this regard than *Salmonella* or *Campylobacter* in terms of the health consequences of the increase in *E coli*. Also connected with that, you do not link it directly with food hygiene, but you do say that there should be a code of practice for farms visited by the public. Does this mean that you are worried about what happens to people when they visit farms? Is this the end of farm holidays?

(*Mr Gardiner*) Let us deal with the latter point; the visitors to farms. We have an excellent exercise between farmers who open their farms to the public; the Health and Safety Executive who are primarily responsible for this issue; and ourselves. We have agreed extra signing on farms: a proper code of practice; a proper set of practical instructions which these farmers can follow. Sometimes it is a farm which is in the business of being open to the public a great many number of days. Sometimes it is a farm which is opened up once or twice a year. Those farms, in particular, need special guidance. There is a minuscule risk which has resulted in a couple of incidents. Nevertheless, we want to keep that under control. I have no doubt that in the coming farm visiting season—there are not many people on farms in January—we will have a good track record and every farmer will know precisely what they are doing to protect visitors. That will be a satisfactory outcome. Contamination: farm animals should be presented for slaughter clean. There does not seem to be any question about that. The degree of the problem would depend, of course, on the accuracy of the slaughtering process for most animals. The biggest problem there is poultry. Just because of the very size of the bird you are slaughtering, it is very difficult to avoid contamination on occasions. It is easier on the larger animals. Yes, a lot of health experts would say that *E. coli*, some of its varieties are new, and are substantial dangers which we need to understand more and the practical implications of how to control them. They are clearly important, as the Scottish experience shows. The industry must be committed to doing everything it can. They may well be a bigger problem than some of the *Salmonellas* but we need to control everything the whole way through the food chain. If we get it right on the farms; right through the food industry; and just as importantly, right through our kitchens and our fridges and on our chopping boards—

658. Presumably, you have identified the areas that are at risk, where there is a risk of faecal contamination becoming a problem on the farms. You have guidance for farmers on how to deal with that. There is a point at which it stops being the farmers' and becomes part of the food industry.

(*Sir David Naish*) It would normally be the normal husbandry standards; of the way of keeping them on the farm; bedded animals. The point that Mr Oliver-Bellasis made earlier, obviously animals that do not come indoors, which are bred on the hills, is not as easy.

Chairman

659. You did not, in your answers to Sally Keeble, unless I missed it, emphasise your recommendation in your written evidence about lorry design and journey conditions. Do you attach great importance to that recommendation?

(*Sir David Naish*) Yes, we do attach importance. There is no doubt that animals are moving greater distances as slaughterhouse numbers are reduced, so there are some major distances involved. I think the indications are that the Pullman hauliers, the ones that are going further, are moving very quickly to change lorry design to accommodate the different sorts of species that they can.

Mr Marsden

660. May I follow that up. I could not actually recognise what you were saying there; what practical steps you are taking in order to try to reduce 22,000 cattle that are being rejected by the slaughterhouses. So what practical steps are you taking? I totally appreciate that for hill farmers, and farmers who might turn up with their own vehicles with literally only two or three cattle packed in the back, it is difficult; but they are potentially a threat to food hygiene. What practical steps have you taken to assist your members?

(*Mr Oliver-Bellasis*) The number of dirty animals identified is around 5,000. The practical steps that we are taking is that farmers are doing their very best to make sure that these animals are brought in prior to transportation so that they can be cleaned. The issue is that nobody has identified the level of risk which should be attributed to the farm with a dirty or a semi-dirty or a clean animal, in relation to that process and transport and in other parts of the process that they go through. Farmers are only able to achieve a certain standard given the weather conditions, their housing conditions, and so on.

(*Sir David Naish*) To add, if I may, to the point that Mr Gardiner made. The Meat Hygiene Service—and we have been with them at joint meetings around the country—we have been explaining to farmers the practicalities and the advantages, (and the marketing advantages), in terms of when a rejected animal has to be taken back, cleaned and then re-presented, which has a considerable cost. There is a sign—and I

[Mr Marsden *Cont*]

hope my colleagues from the meat industry will endorse this—that people are taking this issue tremendously seriously, so it is improving.

661. You said in your written evidence that the NFU considers that the following research activities are needed, including increased efforts to develop cheap and effective vaccines against the common disease causing bacteria. We understand that in special relation to *Salmonella typhimurium* DT104 in cattle, initial indications from work undertaken by MAFF are that vaccination appears to offer some protection. Have you been involved in these developments, and how would you generally envisage vaccination being further extended?

(*Dr Barber*) We have not been specifically involved in these developments, in actual fact, because we do not have a research function in the NFU and the group of farmers and growers. It will obviously be one of the factors which could be of some use, but it will not actually solve the problem. Talking about *E. coli* 157, which is one of the ones which is clearly causing concern, *E. coli* is a normal inhabitant of the digestive system of everyone, including ourselves. To produce a protection against that particular variety and not affect the other normal inhabitants, would effectively be impossible. Also, bacteria rapidly mutate and change. So you can have a system which works against one for a period of time, but eventually it will need to be replaced in some way. Therefore, it is always going to be part of an overall husbandry approach, I think, and not the overall solution.

(*Sir David Naish*) The point that Dr Barber makes is absolutely relevant. As he says, we do not have the research base. I guess the development of vaccines is driven by the veterinary profession as well. Indeed, we want to encourage, for obvious reasons, the continuation of this research, but it will be commercially driven as well. We shall encourage research to continue. We shall encourage the availability of vaccines where sensible, but it would be wrong for us to presume that we can have a major influence on that. The large pharmaceutical companies will make the decisions in the end.

662. On the separate question of antibiotics on farms, a general question of where do you see scope for reducing further use of them on farms? Also, could you perhaps go on to discuss the concern which has been caused by the development of resistance of micro-organisms to certain antibiotics; and expand your comments to do with current trends in usage of antibiotics and prophylactics and therapeutics.

(*Mr Gardiner*) We are in some difficulty here because we are in the middle of quite a major study on the use of antibiotics on farms. I am prejudging the results of that which would be a little time away.

Mr Marsden: Taken in this context—

Chairman

663. Could you give an indication as to when results might be available?

(*Mr Gardiner*) Another six to eight weeks.

664. Will that be public information?

(*Mr Gardiner*) We can certainly send it to the Committee. It will be public within the NFU, yes. Of course, there is a great deal of concern on this subject. What we are trying to investigate, to a large degree, is the danger from antibiotic resistant micro-organisms because of their development on farms, or elsewhere, in the food processing industry. Or is the problem coming out of human medicine? Most people seem to take the view that there is a substantial problem from the use of antibiotics in the human population. We are not competent to comment on that, so I will stick to the farming use. The farming community has used antibiotics for growth promotion; for disease prevention purposes; and also for animal welfare purposes. If you prevent an animal catching a disease, you increase its welfare. Those uses are well established—not only in this country—but across the world. As I say, we have not completed our studies on evidence from everywhere as to what the implications of this could be, but certainly our initial soundings seem to indicate that the dangers from using antibiotics specifically in the animal population may be rather less than some people fear. Again, I do not want to give a conclusive answer from our viewpoint because we have not reached a conclusive conclusion.

Ms Jones

665. You refer to the pesticides and veterinary medicines surveillance programmes undertaken in foodstuffs by the Government, and say that they show that there is "little cause for concern in the United Kingdom". However, it would be unwise to accept the results of these programmes as completely reassuring. Would you agree that surveillance would not necessarily identify relatively high residue levels occurring infrequently or randomly, such as was demonstrated in carrots a few years ago?

(*Mr Gardiner*) Of course, no sampling programme could discover every event. That is not the purpose of the sampling programme. The Government takes a sampling programme on a random basis of home and imported food supplies, but increases the incidence of its sampling where it knows there could be problems. That seems to me to be absolutely the right way to go about matters. It is interesting how small, how infrequent, is the incidence of breaking the MRLs, which are not a food safety limit; they are a farm management limit. They show that somewhere in the production, someone has done something wrong. Of course, if we have proper traceability systems, which we have to a very large extent in crop production in this country, you can take individual incidents back to the farm (or group of farms) which could be the origin; talk to the farmers and change their farming practices; or find out that there was a specific incidence of a problem which would not normally be repeated. The figures show that we have exceeded the MRLs. These are not food safety limits. They are substantially tighter than the food safety limits. Where food safety limits are attached to a programme, there clearly has to be more stringent controls, both from domestic and imported supplies. To pick up the particular point about carrots. It is not that the sampling programme, which the British were following, was any different from any other sampling programme. It was the recommended sampling programme. What it did show was that individual roots had a bigger variability in their

[**Ms Jones** *Cont*]

pesticide content than had been believed. Again, the same thing happened. We are talking about exceeding MRLs and not food safety limits. To get close to a danger from this food safety limit you have to eat a lot of carrots. If you eat a lot of carrots then the sampling procedure, which relied on putting together ten carrots, is a perfectly acceptable way of looking after food safety.

666. May I refer to the report which you mentioned in your written evidence. This is the *Food, Nutrition and the Prevention of Cancer*, which is the WCRF/AICR report. It deals with cancer risk. What about public concerns about other risks such as neurotoxicity?

(*Dr Barber*) I am not quite clear what you mean by that. We could not work this out beforehand.

667. In the report, the *Food, Nutrition and the Prevention of Cancer*—

(*Dr Barber*) I have seen the report.

668. It obviously deals with cancer. What about other issues of public concern? The one we mention is neurotoxicity.

(*Dr Barber*) The report you referred to—this is not quite answering the question—but it actually specifies that in industrial countries, the risk from pesticide residue, as far as cancer risks (or other risks for that matter) are concerned, that the situation is not there. The risks from these pesticides were not a significant factor in developed countries, although it may not be the same in under-developed countries. You are worried about organo-phosphates, presumably, which could have a neurological effect; but there is not a significant content of those in the food we eat. This is borne out by the study which was made—a world-wide study actually—of documents, but bearing in mind these reports were not original studies. They were based on the original published documents. Nevertheless, they suggested there was not a risk; at least in industrial countries.

Mr Hayes

669. Given that answer, and I hear what you say, should we therefore be putting more energy into reassuring the public that these risks are minimal? It seems to me that the traffic, in terms of PR, has been one way largely. The second question is: would it be fair to say—and I have often heard it asserted—that the various chemicals in the pesticides which the farmers use are safer now, because of the development of those chemicals, than they were, say, 10, 15 or 20 years ago; when people were, (to put it in simple terms), dosing stuff on with gay abandon and perhaps less sensitivity to some of these issues. I would not want you to condemn your members historically but you take my point.

(*Sir David Naish*) I would like to pick up Mr Hayes' point. I do believe the positive public input to what the situation is, is extremely important. The point that Dr Barber makes of the assimilation of these reports of saying that the risk is non existent—nobody knows what non-existent means—but the risk assessment which could be imposed is that it is certainly gratifyingly low at this stage. Equally, though, certainly there is a lot of evidence about the handling and the application of chemicals, which has moved a tremendously long way to be much, much safer both from a food safety position; environment situation; and from the operatives' position.

Ms Jones

670. May I follow on from there. You say that overall information on the environmental and potential health hazards of pesticides could be improved, and producer awareness of the codes of practice for the use and disposal of such substances is not always satisfactory. Perhaps you would like to tell us how these problems should be overcome. Who should be responsible for the task?

(*Sir David Naish*) I actually think that the existing codes are brilliant with the amount of information they contain, but as a layman in this regard it is certainly very difficult to find all the information you want on them in a practical user-friendly way. I would very strongly recommend that we have to look again and again at how we can make sure that it is easy to understand, and that the information which is necessary is transmitted on each particular operation, rather than a tome of instructions which contains the information to be used but not always in an easy way.

(*Mr Oliver-Bellasis*) Chairman, I think the issue is also about the compilation of all the codes of practice. The fact is that there are codes of practice in a number of areas. It would be extremely helpful if they could be put into a document with really good indexing—and possibly even on to CD or whatever—so that they can be interrogated faster when people perceive that they have a need for information. We are currently, as an organisation, pressing the Ministry of Agriculture on what we should be doing so that they are more user-friendly.

671. So who should be responsible for the task? Who should be responsible for putting all the information together? You think the Minister.

(*Mr Oliver-Bellasis*) I think I am right in saying that the information is all there. It is a question of dealing with the data in a more modern fashion. I do not think with the codes, which are continually updated, that there is a lack of information. It is the ability for me and my staff, as individuals, to be able to get at that information in a way that is simple.

672. Good record-keeping on farms can obviously produce good retrospective information. How does it contribute directly to improving food safety?

(*Sir David Naish*) Directly contributing to improving food safety is just the point you make: that, in fact, the records are kept. Therefore, that people are, in fact, guaranteeing or warranting that the production of the product has been done in a way that is to the very highest standards. In the produce side of our business, the integrated crop management schemes which were developed with our customers, with the retailers and the caterers who buy the produce, the records that are kept there give them the assurance of being able to follow back the food safety trace should there ever be anything found out. Equally, one can see in the combinable crop scheme, that the same trace is there now. We are able to look at how—even though the product is later ploughed up—it was produced. We can make sure, in fact, that

[**Ms Jones** *Cont*]

the quantities; the weather conditions; the application date of anything which was used in the production; is recorded.

673. That is still retrospective, is it not?

(*Sir David Naish*) But it is a management tool. In fact, if one is recording it—and you are recording it at the time of application—certainly it is retrospective if one is looking at it as a trace for something which went wrong. However, certainly if I signed up for any of these schemes—certainly we are in the produce one and we are joining the cereals one at this moment—at any day an inspector can come. He can say, "I have seen a sprayer in that field today. What is he spraying? What is the quantity? What are the goods?" It has to be a retrospective record for trace but it is an up-to-date record of what is happening on the farm. There is no way that anybody could write the thing a month later. It is what is done that day and transferred that night.

Chairman: We have one more question we want to ask. I will ask Diana Organ.

Mrs Organ

674. One of the problems with pesticides, particularly organo-phosphates, is that they are widely used by the general public: from spraying our dogs to putting the lotion on our children's heads for lice; to putting it on our lawns and roses. It is very difficult, therefore, actually to dissociate what is coming into the water cycle from general household or garden use, and what is coming in from direct agricultural use. Has there been any work done on the balance of how much the general population is using organo-phosphates and putting them back into the water cycle?

(*Sir David Naish*) I am afraid none of us know if any work has been done on it. I was asking my professional advisers and I am not sure, but I wholly endorse the question. There are many areas where we are not clear of what contamination—if contamination is the right word—we are creating by domestic and garden use. We are regulated (and rightly so) within the production of food for commercial purposes. I am more than happy to accept that regulation. It is probably an area which does stand some very careful investigation.

675. Would it not be possible for this to be one of the things which the Food Standards Agency might be able to do: the linking between trading standards, health and agriculture? That it actually looks at the monitoring of all labelling of organo-phosphates for the general public as well.

(*Ms Crago*) I agree, Chairman. I think it is a very good idea. You are quite right. Some of us, who do gardening, do sometimes wonder and look at the labels. Certainly being involved in the work that I do, I look at the labels on my gardening products very closely. It is an excellent idea and it is something which we could follow up.

676. Whereas farmers may be very careful with pesticides they are using; those of us who are just throwing it around on our kids' heads or lawns may not be using it in the correct manner.

(*Sir David Naish*) I would not be critical of my customers, Chairman, under any circumstances.

Chairman

677. We are going to have to call this session to a conclusion at this point, I am afraid, to enable us to hear our future witnesses. But I am encouraged by Mr Mitchell to utter these words: *Ave Atque Vale*, Hail and Farewell. We have two issues we want to write to you about, if we may, on organic farming and pesticides and biotechnology, which we had hoped to explore with you today. We will write to you and get further written evidence on those points. May I repeat our gratitude to you.

(*Sir David Naish*) Chairman, may I thank you for the opportunity to give you oral evidence like this. Indeed, we would be very happy to respond to those questions if you could send them to us.

Chairman: Thank you very much.

Supplementary Memorandum submitted by the National Farmers' Union of England and Wales (C100)

FIRST QUESTION POSED BY THE COMMITTEE

Given that organic farmers can produce commercially without pesticides, how essential are pesticides for UK agriculture? Does the NFU have any data to indicate the likely financial effects and the effects on the volume and quality of UK production, which would result from a substantial reduction in pesticide usage?

RESPONSE

General

Several interest groups are urging the Government to adopt extensification as its policy for agriculture, arguing that it is the only means of ensuring food safety, wildlife protection and pollution avoidance. Their proposals lean heavily on widespread adoption of organic farming, excluding almost all use of chemical fertilisers and pesticides. Extensification of crop production and organic farming is appropriate for some farm businesses, but would not be appropriate to be applied generally because:

- Wide scale adoption of organic or very low input farming would severely and needlessly limit Britain's ability to feed itself from the land currently cultivated from crops. To sustain the present national yield of crops, large areas of currently uncultivated land (including set-aside) would have to be brought into crop production to compensate for:
  (a) yield reductions on each hectare averaging about 30 per cent;
  (b) fewer food crop opportunities in the rotation because of the need to grow fertility-building non-food crops, such as clover and field beans;
  (c) more erratic harvests, with crop failures through pest and disease attack common and
  (d) more frequent need for fallow crop-free years to clean up fields from perennial weeds.
- Over the past few years, more intensively managed farms have been able to concentrate production on land better suited for growing crops, allowing them to return less suitable parts of the farms to wildlife habitat and to adopt wildlife-friendly management of field margins.
- Severe restrictions on fertilisers and crop protection products and would reverse these trends significantly. To maintain farm outputs, much more land would be needed, leading to greater encroachment on wildlife-rich woodland, moorland, heaths and wetlands.
- Bacterial and fungal contamination have been a recognised major cause of outbreaks of food poisoning in the UK. This may become worse as greater reliance is placed on the use of potentially infective animal manures and human sewage. The present protection offered by chemical fungicides against potent fungal toxins will be lost.

The NFU's pesticide policy strongly supports the adoption of integrated crop management (ICM) as the means to maintain a profitable, productive yet environmentally responsible agriculture. ICM combines the tried and tested traditional methods with the sensitive and skilful use of modern technology in all activities on the farm. Farmers practicing ICM are demonstrating that they can deliver profitable and productive agriculture using modern techniques and still retain a rich and diverse wildlife.

Financial Effects

The NFU is aware of only two fully costed, large scale comparisons of conventional and organic farming, both of which have reached very similar findings. CWS Agriculture (Britain's largest farming company) and Rhone-Poulenc Agriculture's projects have been running since 1989. The economic performance of the CWS project over the first seven-year rotation may be summarised as follows:

- Organic farming can be as profitable as conventional farming. The margins after variable and cultivation costs were:

	Organic		*Conventional*	
	Mixed	*All-arable*	*Mixed*	*All-arable*
No subsidies	£263/ha	£320/ha	£303/ha	£343/ha
Area Aid Payments (actual levels)	£441/ha	£473/ha	£477/ha	£482/ha
With organic conversion grant and Area Aid (1996 levels throughout)	£513/ha	£656/ha	£507/ha	£679/ha

- There is a much greater risk of total crop failure with organic farming and yields are consistently lower than under the conventional system:

	W. Wheat	*W. Oats*	*W. Beans*
Organic (CWS Agriculture)	4.82 t/ha	4.87 t/ha	2.60 t/ha
Organic (Standard)	4.30 t/ha	4.30 t/ha	3.70 t/ha
Conventional (Standard)	7.12 t/ha	5.75 t/ha	3.60 t/ha

- CWS Agriculture's organic farming results compared favourably with national organic standards. Contrary to expectations, the all-arable system proved to be more profitable than the mixed system.
- Agricultural support is essential to organic farming. Set-aside has been particularly valuable to the all-arable organic system. It allowed some payment to be received during the vital fertility building period when green manure crops are grown and ploughed in to provide sufficient nutrient for the following cash crop.
- When the current organic conversion payments are included in the figures, the organic and conventional systems achieve a similar level of profitability. Wheat is the main case generating organic crop.

— The economic viability of organic farming relies on the achievement of significant price premiums. Overheads are generally lower but the lack of a large market reduces the potential to spread overhead costs over a broader average. Organic farming is viable on a small scale where premiums can be obtained but lack of market demand restricts the potential to scale-up the operation. This is probably the reason why just 0.3 per cent of UK farmland is managed organically.

The project will be continued for another seven-year rotation but significantly CWS Agriculture has no plans to extend organic production to the rest of the 50,000 acres it currently farms.

The cumulative gross margins (excluding arable area payments) in the Rhone-Poulenc project show that over a seven-year period, conventional agriculture gave the highest income per hectare of £10,675 compared to the organic systems £5,296. The low figures for organic farming were due to the losses made during conversion. The appended gross margin histogram indicates that in 1996 organic production was the most profitable, as the premium achieved in the organic niche market was 102 per cent! Clearly if all the UK production became organic this premium would cease with the obvious financial consequence. Organic wheat is by far the most valuable crop in the project, but the whole organic system tends to be less profitable and more variable than conventional.

Yield and Quality effects

This response does not address the horticultural sector where the loss of yield and marketable yield from organic production requires a very substantial premium from the consumer to economically sustain this production technique where spoilage levels are very high. Quality assessments of flour and bread in the Rhone-Poulenc project, carried out by NIAB, show that the protein content is lower in the organic grain and white bread from conventional grain was judged to taste fresher than the organic bread.

Organic yields in the Rhone-Poulenc project have averaged 5.2 tonnes/ha compared with 8 tonnes/ha in the conventional system. It is interesting to note that the ICM average is 7.96 tonnes/ha and the ICM gross margins have been the most favourable because of the reduction of inputs achieved.

The NFU has calculated the consequences of growing all UK crops organically, using average yield figures for 1994 from MAFF statistics for conventional farming and from Nick Lampkin's standard reference book on organic farming. For other crops, it is suggested that the organic yields would be equivalent to the conventional yields for 1950, which was prior to any significant chemical input.

Crop	*Area (m ha.)*	*Yields (tonnes/ha) conventional*	*Organic*
Winter Wheat	1.900	7.27	4.3
Winter and spring barley	1.220	5.3	4.0 and 3.5
Potatoes	0.150	37	19.9
Sugar Beet	1.185	47.6	24.8

On this basis, the following shortfalls and equivalent areas were calculated:

Crop	*Shortfall (m tonnes)*	*Equivalent area (ha.)*
Winter Wheat	5.700	1,325,581
Winter barley	0.936	234,000
Spring barley	0.750	214,000
Potatoes	2.550	128,140
Sugar beet	4.625	186,491

To make up these shortfalls the total extra land needed would have been 2,088,212 hectares which is slightly larger than the size of Wales (20,000 square kilometres).

Finally, many commentators would argue that organic farming environmentally is not totally benign. For example, the harrow-comb weeding technique can adversely affect small mammals and nesting birds. The Rhone-Poulenc project has demonstrated that the crop and related cultivations are the key parameters in determining arthropod (the insects at the bottom of many food chains) populations and have proved to be more significant than any transient effects due to pesticides.

Second Question Posed by the Committee

Of the various measures which the NFU supports in relation to the use of generic modification in food production—segregation and labelling of genetically-modified crops, further research on the development of replacement marker genes, a 10 year programme of post-release monitoring—which are actuated by actual or potential food safety risks, and which by public concerns and actual or potential risk to the environment?

Response

Segregation and labelling

The regulatory system that is presently in place in the UK and Europe is considered to be rigorous enough to ensure that it is unlikely that a hazardous product would be approved for use in the EU. This means that the requirement for segregation and labelling is a matter of consumer concern and consumer choice. The NFU gives high priority to consumer satisfaction, which is why we have taken the segregation and labelling stance. It should be every consumers right to have labelling that tells him/her what is in a food so that they have a choice as to whether to eat it or not.

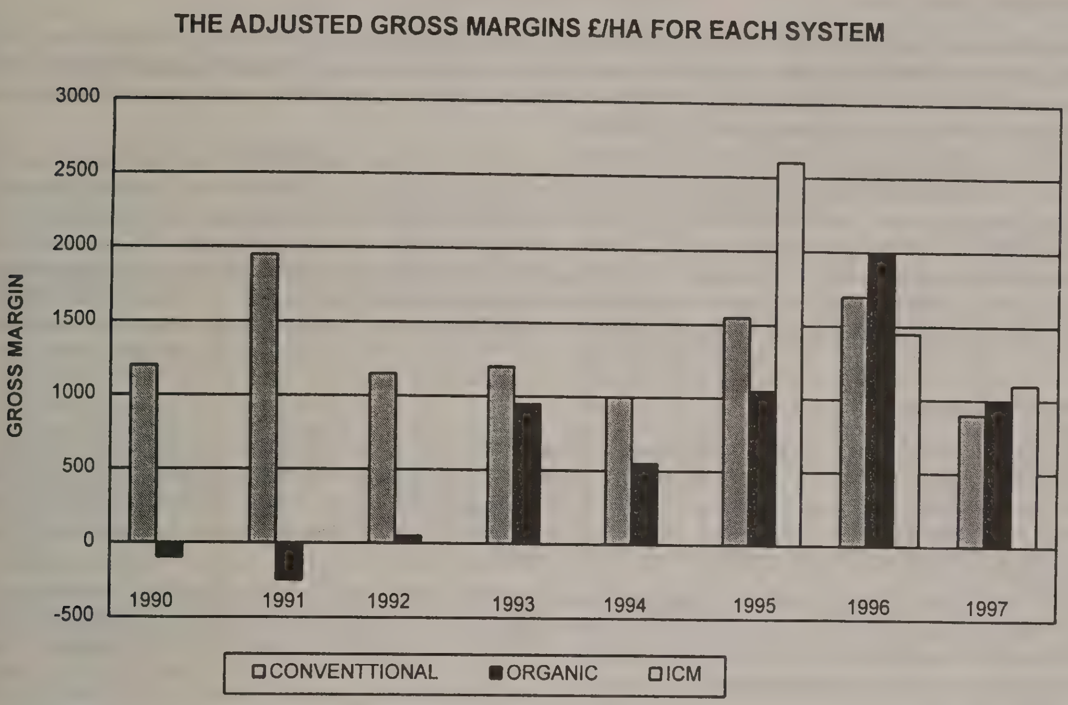
Antibiotic resistant "marker" genes

One regulatory decision with which the NFU were not in agreement was the overruling of the ACNFP unwillingness to give regulatory approval to Novartis's Bt maize. This product contains an antibiotic resistant "marker" gene that gives a resistance to the antibiotic ampicillin. The worry was that this resistance might be passed on to livestock eating the maize with eventual transfer to the microbes living in the human digestive system. This risk was considered to be very low, but it was felt unwise to approve this product until experiments had been done to evaluate the risk. These experiments are presently being undertaken and should have been done *before* the Bt maize had been approved. The Flavr Savr tomato paste also has an antibiotic marker gene but this doesn't have the sort of DNA promoter sequence that would allow it to be replicated in a bacterium. So, this product is considered to be "safe" for use. The reason for the blanket rejection of antibiotic resistant "marker" genes is that consumers are unlikely to be able to recognise the distinction, and in any case some alternative "marker" genes are already available. However, a large range of such genes would be likely to discourage the use of antibiotic resistant marker genes.

Post-release monitoring

The regulatory processes should ensure that no GMO is released that is likely to have an environmentally deleterious affect. However, it is likely that there *will* be some environmental effects and these are difficult to quantify using test plot growing. These effects would be for example a reduction in the available habitat for certain insects, which may reduce the number of predators that feed on them (eg birds, small mammals, etc), or the outcrossing of GM crop plants with the transgene being transferred to weed species. With products such as herbicide tolerant crops the worry is that genes from several different herbicide tolerant plants would become aggregated in a single plant species—a process called "stacking"—to make a super weed. None of these environmental effects are thought likely to be all that significant. However, there are unknowns. For example, the possibility of genes being transferred via plant viruses with unpredictable results is one area that needs further research. So, the NFU feels that there are legitimate concerns that could be revealed and evaluated by a programme of compulsory post-release monitoring.

February 1998


THE ADJUSTED GROSS MARGINS £/HA FOR EACH SYSTEM

Memorandum submitted by the Federation of Fresh Meat Wholesalers (C49)

FEDERATION SCOPE AND POSITION

FFMW represents the collective interests of the majority of the red meat slaughterers of England and Wales, with a collective turnover of £2.5 billion annually and responsibility for 85 per cent of the throughput in red meat slaughterhouses. Most of our members are also involved in further processing and retail packing for multiple retailers and are therefore closely involved in product development for fresh meat sales.

FFMW supports the concept of emphasising food safety and the need to recover public confidence in the safety of meat, and trust in those responsible for it;—from producers, meat processors and sales outlets to those who draft and enforce legislation covering safety—the Meat Hygiene Service, the Ministry of Agriculture and Government Minsiters.

REGULATORY ISSUES

The meat sector is concerned over potential duplication and additional layers of bureaucracy as outlined in the James Report in an industry that is already very closely policed. We would emphasise that meat in slaughterhouses is essentially a safe, low risk product. We resent the spotlight being focused on the fresh meat sector when there is no pressure on livestock farmers, manufacturers or even home consumption. However, we would accept and urge that the below standard meat plants should be closed and cease to be able to cause damage to the rest of the industry.

We firmly believe that there is a need for co-operation between the Meat Hygiene Service (MHS), and meat plants. We accept the MHS as the industry's policemen and would want them to maintain that role within the FSA. We see no need for additional inspection, but will work for ever higher standards through the Assured British Meat initiative and market driven supermarket quality assurance schemes which operate from farm to plate. It is a serious anomaly that all the links in the meat chain are either licensed or inspected except livestock producers. We believe that in view of the importance now attached to food safety and producer resistance to farm assurance that livestock producers should operate under licence.

Additional regulatory measures will have cost implications and the slaughtering and wholesaling sector already works on very narrow margins that would be unacceptable in other industries. Furthermore, we believe that consumers will resist higher meat prices.

ADDITIONAL LEGISLATION

It will be important not to introduce legislation that is in impractical or unenforceable. We have too many examples in place already. Public confidence will depend on an acceptance of sound and well policed meat inspection. For example, we are already concerned about draft legislation relating to the removal of specified risk material (SRM), from sheep, and beef labelling.

Nor do we want legislation that puts the United Kingdom at a further competitive disadvantage compared with other EU members states. It is important to realise that the pig sector is already at a disadvantage of £3 per pig compared with other continental competitors. Similar disadvantage applies to the sheep and cattle sector. The EC SRM measures, even if adopted across the EU, will still leave the UK at a relative disadvantage since a number of national measures go well beyond those accepted by the EC. For example, meat and bonemeal is still fed to poultry and pigs abroad, and their meat is then imported back to the UK for sale. Equally, SBM measures will continue to differ on the Continent where head meat will still be marketed.

CONSUMER CONCERNS

We are concerned about the level of importance attached by this Government to consumer views. We sense a reluctance in a number of their representatives to relate the issues surrounding the conversion of live animals into meat to an industry that needs and is entitled to make a profit like all others for its survival. Issues of animal welfare and public safety, when mixed with commercial trading, cause consumer concern and even revulsion which lends additional strength to vegetarianism.

Calls for "independence" and "transparency" do, however, pose some practical problems. For example, the proposed Food Standards Agency (FSA), must necessarily be operated by staff with experience and competence. The officials for the FSA are therefore likely to be drawn from MAFF and the DoH. Will consumers regard this as independence?

Transparency demanded by some consumer groups is also a matter of balance betwen the legitimate public interest as opposed to the need for commercial confidentiality. On this subject, Government proposals to publish Hygiene Assessment System (HAS) scores by individual plant name is strongly opposed by our sector. The HAS system is a management tool supported in its introduction by our members. They deeply resent publication which will damage the commercial interests neither of the best or worst plants, but those who have invested heavily and already meet all requirements of legislation and codes of best practice. This may be an example of the enforced rationalisation of the wrong plants.

The consumer will not see HAS scores published on meat packaging at retail outlets, but may well be confused by reports that meat is being sold by plants with a score less than 100 out of 100. This is not however a consumer safety issue, but one of choice.

INFORMATION RELEASE

We will expect the handling of health issues, press releases and scientific reports to be handled with greater sensitivity and skill than has been evident recently. In particular the release of the COMA Report and the publication of HAS scores issue have caused unnecessary confusion and concern not only to the public, but also to our industry. The FSA will need to co-ordinate carefully to avoid unnecessary damage and in building up consumer confidence.

NUTRITION

Finally, we are concerned over the inclusion of "nutrition" and compositional standards as a food safety issue. Nutrition is in large measure a quality issue linked to price. It would be unfortunate and inaccurate if consumers were led to believe that cheaper cuts of meat were not nutritious or less safe, but equally for them to expect expensive hind quarter cuts to be available cheaply on nutritional grounds. The consumer must be provided with choice within a range of prices.

22 October 1997

Examination of Witnesses

MR RICHARD CRACKNELL, President, Federation of Fresh Meat Wholesalers (FFMW), and Managing Director of Anglo Beef Processors Limited, and MR ASHLEY BOWES, Immediate Past President, FFMW, and Director, Bowes of Norfolk Limited, Federation of Fresh Meat Wholesalers, examined.

Chairman

678. Mr Cracknell, thank you for coming to see us a second time. We came to see you the last time. This Committee is not afraid of seeing the truth about the meat industry. We had a very enjoyable and interesting visit to one of your abattoirs outside York, and I thank you for that. We are grateful to your providing us with evidence today and coming before us. May I ask you to introduce yourself and your colleague to the Committee.

(*Mr Cracknell*) Indeed, Chairman. My name is Richard Cracknell. I am the President of the Federation of Fresh Meat Wholesalers and Managing Director of ABP, slaughter of beef and lamb. My colleague here is Ashley Bowes, who is the Immediate Past President of our Federation, and is a pig slaughter and Managing Director of his own company, Bowes of Norfolk. Thank you very much for coming to our abattoir too. It was not as bad as many of you thought.

Chairman: We all survived to tell the tale anyhow. The ladies were particularly robust, it has to be said. Mr Marsden.

Mr Marsden

679. In the written evidence that you have submitted, you referred to the meat sector's concern "over potential duplication and additional layers of bureaucracy as outlined in the James Report in an industry that is already very closely policed." Why then should the transfer of the MHS from MAFF to the Food Standards Agency, as proposed in the Government's recent White Paper, be of concern of you? Do you fear that, under the new Agency, the MHS would be directed to take an even stricter line on meat hygiene?

(*Mr Cracknell*) When we wrote our evidence, of course, we had not had sight of the White Paper. Having had sight of the White Paper, we are not concerned, from a practical point of view, about the Meat Hygiene Service being transferred to the Food Standards Agency. It is our experience that they do their job fairly diligently; have been pretty tough; and, on balance, have been fairly well balanced with the industry. The fact that they are going to have a new boss I do not think really concerns us from a practical point of view. What does concern us is that often when we get new bosses and reorganisation, comes more bureaucracy and another layer of people who are going to have to be paid for. Uniquely, the meat industry is the only sector of the food industry that currently pays for its inspection and police force. We are absolutely encouraged to see that other sectors may have to pay as well. We have been the only people paying. We are already facing probably more than a doubling of meat inspection costs for many people because of the withdrawal of the Government subsidies for SRM control. That is going to put serious pressure on our industry after 1 April. We are concerned that more bureaucracy equals yet more cost without any improvement in service to the consumer.

680. So there is a fear of bureaucracy. No doubt that is something that you cannot tangibly say will happen?

(*Mr Cracknell*) No, until we see how many extra people—if indeed, any at the moment— The Meat Hygiene Service report to MAFF. It is our experience that MAFF have taken their responsibilities in that area very seriously—in the last few years anyway. I cannot imagine there is going to be a much tougher regime under the Food Standards Agency.

681. Do you have any specific concerns over the other proposals contained in the White Paper then?

(*Mr Bowes*) Yes, we are very concerned because of what has happened in the past in the meat industry, where we have been under pressure. We believe that we probably have the healthiest and best meat industry, possibly in the world. What we feel needs to be done that is not mentioned in the White Paper to any great extent is education of the new generations coming forward. We feel that the younger generations should be helped by the Food Agency. Also, because we have been under strict controls for many years, there are areas where the consumer actually puts our product at risk, whilst we have gone through a cold chain of production and we have delivered the goods to the retailer and also the retailer has delivered the goods to the consumer in the proper condition. From that point, there can be risks which can return to us through traceability. We feel that there should be true education to the consumer. I will give you one little example. If one calls at a motorway cafe and sees the number of people just walking into that cafe who do not wash their hands before they eat and then the number that actually go into the toilets and also do not wash their hands after they have been to the toilet, I believe there is education needed, in schools especially.

682. Are you saying therefore that you are concerned that there could be a comeback on yourselves because of something that happens further down the chain? Even though there are obviously inspections, checks and balances all the way through your own processes, so clearly that is where the checking will be recorded, you are still concerned about further feedback to yourselves in that somehow you have done something wrong?

(*Mr Cracknell*) I think the question you asked was about our reaction to the Food Standards Agency in general. I share Ashley's view that in fact it is virtually impossible to produce a totally sterile piece of meat. We will do our very best and it will be very, very good, but in the same way as a bad cook can ruin a good steak a sloppy consumer, housewife, person, can cause contamination and worse in the food chain after the meat leaves us or indeed the retailer. I think we would like to see more emphasis on safe handling of food and education with regard to safe handling of

[**Mr Marsden** *Cont*]

food than is currently the case. In the States now it is compulsory to label and to put safe handling regulations on every bit of poultry, beef, lamb and turkey that is sold. We would like to see more focus on that because we believe that is where the greatest degree of risk is.

683. You have concern over the insufficient education of the new generation coming through but what other specific concerns do you have with the Food Standards Agency as proposed at the moment? Do you cautiously welcome it or are you saying that you do not want to see it?

(*Mr Bowes*) We welcome it. As a whole, I think the industry can look at it very positively. It can be a way of getting consumer confidence back to very good products, we feel. I would see it as a benefit. At the end of the day, although we tend to be featured as a high risk industry, we are a low risk industry. Of course, the other concern is the cost. We pay for the Meat Hygiene Service, but we are very concerned about the costs that are being thrown about at the moment that are going to be put onto the food industry. Our industry just cannot take any extra costs.

Mrs Organ

684. I think you did hear the discussion that we had with the NFU about the MHS's Clean Livestock Policy and the figures that were given, from July to November 1997, that 22,500 cattle that were presented for slaughter were classified as dirty and, of these, just over 5,000 were rejected for slaughter. Then we talked about what actually happened to those numbers in totality. In your members' experience, is the standard of livestock being presented for slaughter improving?

(*Mr Cracknell*) I think there is absolutely no doubt. I would agree with everything that Sir David Naish said. There is clear demonstration of dramatic improvements in the cleanliness of cattle and sheep. It is not only a cattle problem. In fact, if anything, it is more of a sheep problem because wet sheep fed turnips in the middle of the winter are nearly impossible to keep clean. We have a lot of evidence of farmers who are bringing sheep indoors now, 24 hours before they market them, which is something that was unheard of a couple of years ago. There has been a very active roadshow run by the Meat Hygiene Service and the NFU in partnership, which has done a good job of increasing awareness. I think the livestock auctioneers have done a good job in increasing awareness. I would only confirm that there is a definite improvement. We have perhaps not seen a real dose of very bad weather yet. As we go through the whole of the year's cycle, time will tell but so far there has been a very, very great improvement.

685. Are you happy? Do you approve of the way that the Clean Livestock Policy is being implemented? Do you have any reservations?

(*Mr Cracknell*) No, I do not think we have any reservations. It is about working with the Meat Hygiene Service, the vets in the plants. Most abattoirs and their OVSs have reached some sort of arrangement whereby one or the other is the final spokesman to the farmer. A lot of abattoirs would like to hide behind the vet and say, "It is his fault", but we do know it is our responsibility to reject dirty cattle and sheep before they come that far. I think the arrangements are working well. The policy is clear. There are a lot of pictures which are up in most of our members' abattoirs so that farmers who bring their cattle and sheep in can see what is acceptable and what is not acceptable. Those pictures are also up in the auction marts and I think there has been a good communication process brought about by need, because knowing that cattle and sheep will be rejected if they do not comply has been good enforcement.

686. From the sort of evidence that you might have, do you think it has been implemented consistently or have we got regions which are falling down because possibly the roadshow was not so effective, the awareness is not so heightened or because your members have not been so vigilant?

(*Mr Cracknell*) Many of our members would say, "Oh, he is ruthless on this and it is easy with you; you do not have problems and I do." Most of this evidence is anecdotal. It often tends to be about one or two sheep out of a pen of 20 or 30. There are undoubtedly inconsistencies. I do not know how many OVSs there are giving their own interpretations and even if there is only a slight variation there will be inconsistencies, but I do not believe there is any serious inconsistency. Certainly the noise from our members, which is the way we judge their upset about certain things, has died down. I think it is now yesterday's story. People know what the rules are and abide by them.

687. Lastly, talking about the noise when it initially started and people felt maybe it was not necessary, was it a little too regimental or was it because of the cost?

(*Mr Cracknell*) I think the noise is the fear of the unknown. We are going to talk about HAS scores in a moment. I think in life one finds that, when it actually happens, it is not as bad as you have often feared. There was a belief that it could not be done, but the reality is people buckled down and they worked away at it. There is undoubtedly cost. It costs a farmer to bring his sheep in the day before. He has got to handle them twice. We are sending cattle back to be clipped and to be cleaned up, so there is a cost attached to it, but I think it is a minimal cost.

688. The HAS system may also have its heyday of outrage which may fall into subsidence?

(*Mr Cracknell*) I did not actually say that!

Ms Keeble

689. You are very robust in what you say about what you think of the government's plans to start publishing the HAS scores of individual abattoirs. Presumably though you would not deny that there is a correlation between hygiene standards in the abattoirs and the microbiological quality of the meat which they produce from those abattoirs, would you?

(*Mr Cracknell*) We certainly would not deny that there is a correlation between hygiene standards and microbiological standards. Hygiene standards mean different things to different people. The things that

[Ms Keeble *Cont*]

are in the HAS system are by no means a complete list and are often not the most important things in microbiological cleanliness of carcasses.

690. Do you not think the publication of the information would provide an impetus to abattoirs to improve their hygiene standards, particularly those who have lower standards?

(*Mr Cracknell*) HAS scores have been published for some time.

691. Sort of naming and shaming?

(*Mr Cracknell*) All abattoirs have been banded and the numbers in each grade have been published for some time. Most of our customers are aware of the HAS scores of individual abattoirs that they deal with. That is part and parcel of the normal checks that they make on abattoirs. Our concern in our opposition to publication of individual names was that we think there is a band of abattoirs who are at the top end, who will not worry; there is also a band of abattoirs at the bottom end, who will not worry. Those are the people we believe should either be closed or dramatically improved, but the reality is they are dealing in a sector of the trade that correlates to the backstreet, secondhand car dealer. They will not frankly care whether their HAS score, when it is published, is 25 or 75. It will mean nothing to their customers. The people it may affect—and I think the reason for our concern—were the middle band of operators who perhaps are operating in older, more traditional premises, who produce a perfectly clean carcass but are going to be put under pressure because they are seen to be not as good as the best, although they may well have invested—and investing in abattoirs is a continuing process anyway—and may be put under pressure by their customers. There are undoubtedly pressures from customers who are saying to some companies, "You have got to be over 85 or 90 or you are delisted." It seems punitive.

692. Is it not in your own industry's interest to make sure that the rogue abattoirs are very clearly identified and the pressure is put on the Food Standards Agency or MAFF to deal with those? If people become ill as a result of beef, it is not the abattoirs that suffer; it is the entire industry that suffers. Is it not really in your interest to make sure that the culprits are clearly identified and that pressure is put on to make them improve their standards or shut down?

(*Mr Cracknell*) We have no hang up about that but these abattoirs have been identified for many years. They operated for many years under derogations from the EEC regulations. I have sat in front of many Ministers of Agriculture—as have my predecessors before me over the years—saying, "Please close these abattoirs". If they have not been closed by the regulators up until now, will the naming of them in the newspapers close them? I have to be convinced.

693. Your argument is not so much with the publication of the HAS scores; it is with the fact that the government thus far has not dealt strictly enough with those abattoirs which are actually giving the industry a bad name?

(*Mr Cracknell*) I would think that has been a common theme of our dealings with Government over the last 15 years.

694. Have you put these points to the Government in any discussions about the production of individual HAS scores with individual names of abattoirs attached and have your points been accepted?

(*Mr Cracknell*) We have put these arguments to the Government. To begin with, we said, "Please consider another means, perhaps pass or fail. Name the abattoirs that are below the benchmark you set." These representations to Government have been unsuccessful. It seems that they are stuck in the dogma of publishing and openness—although I am reluctant to call it "dogma"—which I understand. I happen to think, and our members think, it will be confusing to the consumer. She will want to know, "Why should I deal with an abattoir that has only got 75 out of 100? I am told it is all right but why can I not have my meat from one that is 100?"

695. I was going to ask you about your concerns about consumers. You make remarks about concern at the level of importance attached by the Government to consumer views and at the end of the section you also go on to say that this is not a consumer safety issue but one of choice. Surely, in a sense, some of the things you have said are a bit contradictory? Surely people should have the choice as to what quality of meat they buy? I think most people understand the difference between pass marks and top marks because you understand that from all kinds of things, from school upwards. Do you not feel that the consumer should have the ability to choose, particularly given the fact that it is consumer confidence which has done such profound damage to your industry?

(*Mr Cracknell*) I am sorry if it seems contradictory. We are of course worried about the consumer. We are in business to stay in business. We want people to buy more of our products and we want them to be healthy and wholesome and for us to add more value to them. Our customer is king. We do not believe publishing HAS scores is going to give anything to the consumer. The housewife, when she buys her meat, in the main, is not going to know whether it came from an abattoir with a HAS score of 75, 85 or 95. The reality is that most of our customers buy meat from a number of different sources. The meat goes, first of all, through an abattoir which has a HAS score. It then goes through a cutting plant, which has another HAS score and maybe belongs to a different company. Probably half of it will then go through a retail packing plant, which has another HAS score. If you are a multiple retailer or a large seller of meat, there is no way practically you are going to be able to put the HAS scores on the label. The only thing the retailer is going to be able to say about HAS scores—and this is what we are worried about—is that if you are worried about our meat we assure you we buy all our meat from plants with a HAS score of over X. I very much hope that X is 65 which is the official government pass mark, but if it is 85 we are then into the problem that we have got of our worry about the rump and middle ground of very solid businesses that perhaps have not been built in the last ten years.

696. You rightly say it is an issue of choice so why should not people be able to choose? I agree with some of the reservations you have expressed, but if people identify a particular supermarket perhaps as

[**Ms Keeble** *Cont*]

providing meat that is particularly safe, why should not they have the choice, which means having the information? I agree they will not necessarily look at the packet for every last detail but you do say it is an issue of choice so why should not people have the choice?

(*Mr Cracknell*) I do not think it is practical to put HAS scores on to a label for meat, other than in the case of a retailer who slaughters his own animals out in the country.

(*Mr Bowes*) If I may comment on that also, I am in competition consistently with imported meat from Holland and Denmark and there are no HAS scores on their products. There is no other HAS score on any other food on the plate. That is the unfairness about HAS scores.

697. Surely the point is that people can choose to buy completely safe British beef as opposed to unsafe beef from somewhere else? People are not able to have the choice.

(*Mr Bowes*) Whilst you have the HAS score there, you are actually making a judgment, if you like, for the public on a variation of HAS scores which are very good in the high numbers. Even when it is 65, it is good. It is a major problem for our industry.

Chairman

698. You were very critical of government for not having closed down abattoirs with low HAS scores. Would I be right in thinking that the problem is this is very much a moving target, these people who set up and close down, go bust and reopen, and it is actually quite difficult? There is not a vast pool of bad abattoirs and we all know where they are and we can close them down tomorrow. It is a moving target, is it not?

(*Mr Cracknell*) They do tend to be the "here we go again" meat companies. What you describe has happened and perhaps there ought to be a mechanism, when those companies do go bust, whereby MAFF have the power—or the Food Standards Agency in the future—to pull the licence, which at the moment they do not have.

699. From the individual?

(*Mr Cracknell*) From the plant and the individual.

Ms Keeble

700. So they can go bust, keep the licence and reopen again?

(*Mr Cracknell*) Correct. The only time the ministry has the power to pull the licence is if substantial alterations to the premises have been made.

Mr Mitchell

701. It seems to me you are getting yourself into a dog in the manger position. The evidence you have given us is pretty sulky about the regulations: "I suppose we have to have them but really it is expensive; it is going to make us uncompetitive with Europe" and all this kind of stuff. Now, you are in a defensive position on these scores. What are you saying? That the scores themselves are not a very useful measurement? That you really want, as a representative of the big boys, to drive the small boys out of business or that you are afraid that the supermarkets, the big chains, will say, "Ah, this has a high score; we will buy our meat from them" and the others will have to close down? What is the real fear?

(*Mr Cracknell*) We are certainly not frightened of publication. The HAS score is a very useful tool. It was a management tool designed at the inception of the Meat Hygiene Service with which the industry has worked. It has proved to be a very good yardstick and a means for all abattoirs of benchmarking themselves in amongst the published data. Each individual knows where he or she stands within the industry.

702. You say, "Publication is strongly opposed by our sector".

(*Mr Cracknell*) Only the publication of the names. We are not opposed to the publication of the data. Indeed, it has been published for the last 12 months.

703. We see in The Independent this morning that one in five of Britain's abattoirs are expected to fail to meet the required standards under the naming and shaming policy. Surely that is going to be an effective sanction, if not to the consumer who may not know, certainly to the supermarket chains?

(*Mr Cracknell*) I am not sure about one in five. The information has been published for many months now and certainly the number falling below 65 in the red meat sector is nowhere near one in five. In fact, there are actually very, very few under 65 now. Certainly publication has worked. I do not want you to think we are against publication at all. We are only against the naming which we think is going to be difficult for those people who are in this middle bracket. Yes, we are worried about the leapfrogging effect of—never mind supermarkets—any customer saying, "I will only deal with abattoirs below 85 or 95" and, as we often see with many of our customers, there is a leapfrogging effect.

704. That is a pressure to improve.

(*Mr Cracknell*) That is a pressure to improve. It is certainly not an action of the big boys. The big boys probably will be able to improve along those lines. The problem group of abattoirs of our members we see as the medium sized, well established family businesses who have been around for a long time and are upgrading, who conform to all rules and regulations, that perhaps are not 85 or more.

705. You seem obsessed with the question of costs. You say that the pig sector is always disadvantaged at £3 per pig. Why is that?

(*Mr Bowes*) I can explain. It is because of our costs of disposal of offals in this country compared to our foreign competitors. It is because we cannot use meat and bonemeal in this country, which we accept. It is also because we have the costs of loss in food conversion ratio. We are disadvantaged. That £3 is a total pig problem; it is not just a meat problem.

(*Mr Cracknell*) I would not want you to think we were obsessed with cost. No one likes paying money out. I do agree with what Sir David Naish said earlier. The reality is that these costs filter back to the producer. Costs can either be pushed forward in times of shortage or backwards. Clearly we are not in times of shortage of meat.

[**Mr Mitchell** *Cont*]

706. Are you saying therefore that, unless the costs imposed by regulation are the same as your European competitors and the legislative regulation is the same, people are going to be driven to imported alternatives to domestic production?

(*Mr Cracknell*) Of that there is no doubt. We pay meat inspection costs at the moment. The SRM regulations which are picked up by the government are going to be passed back to us at the cost of £11 a beast—approximately £48 million back to the industry. Those are costs that are not passed back to other European industries and, as far as I am aware, there is no intention to do that. They are not even going to police the regulations in some European countries; never mind pass those costs back to the industry. That puts us at a disadvantage plus, both in the beef, pork and lamb sectors, of course we are at a disadvantage because we do have SRM regulations and costs of material disposals as well. We have already lost the byproducts subsidy. Other countries have value for their byproducts; we have a cost. Other countries are able to use meat and bonemeal; we cannot. We are in danger of putting our livestock industry at a disadvantage. Our meat industry relies upon farmers producing more animals. We need more supply. The reality is that we are now in a position of having this year to import about 20 per cent of our beef. We already import a large proportion of our lamb from New Zealand and our pig meat. This is going to get worse and we are a country that naturally should produce livestock.

Mr Collins

707. Turning to the Meat Hygiene Service, I wrote this down because I thought it was a very striking endorsement. You described them as diligent, tough and balanced. Although you did express some concerns about their costs, I wonder if I could ask you to comment on two contrasting perspectives on your relationship with the Meat Hygiene Service. The first is the allegations originally printed by Christopher Booker in the Sunday Telegraph that the Meat Hygiene Service is actually a danger to good quality hygiene standards in your sorts of facilities in that some inspectors have been using dirty knives for inspections and have actually been spreading contamination rather than cracking down on it. What is your perspective on that?

(*Mr Cracknell*) I have no doubt some inspectors use dirty knives. Some slaughtermen use dirty knives. I believe that that is a minimal problem. Standards of training, not only in the Meat Hygiene Service but in our sector of the industry, have risen dramatically in the last five years. The Meat Hygiene Service started off with 200-odd employees. I think it is currently 600. They have had a huge growth in demand. No doubt there are problems. There are in all these plants OVSs and senior meat inspectors who are responsible for training. I have not been aware of the sort of problems that Mr Booker wrote about, and indeed was associated with a television programme about recently, on any scale. It is not something our members are reporting to us.

(*Mr Bowes*) As a Federation, we pushed the single standard organisation in the past, rather than local authorities with different interpretations of the regulations, because that was quite common throughout the country. I can assure you, since the Meat Hygiene Service has been in place, standards have risen considerably and also they are much more uniform.

708. Let us try it the other way around then. The Association of Meat Inspectors say that you are far too chummy with the Meat Hygiene Service and they say that, because of the weakness of the MHS enforcement system, coupled with the lack of desire to prosecute offenders, the food safety risk to the consumer remains. They also claim a degree of collusion between OVSs and plants to get their scores above 65. How would you comment on that?

(*Mr Cracknell*) We are on a hiding to nothing here, I think! I would refute that. I do believe that the industry has a sensible relationship with the Meat Hygiene Service. There is a Meat Industry Forum which we and many other industry organisations are able to go to and air their grievances and have a discussion. At regional level, I believe the Meat Hygiene Service are aware that their people have to work with those in the abattoir to deliver safe meat. It is a team effort. Some of you came to our abattoir at York. It is almost seamless. The slaughtermen are working alongside the meat inspectors. They are in line. It is hard to be policemen, I know, but it is our experience that they do that. Certainly the noise that we get from our members at the moment, the clamour about, "I've got a very unfair vet who has only given me a HAS score of 71. I want something done. Please take this up with the Meat Hygiene Service"—I am not sure if it is the Association of Meat Inspectors or Mr Booker or Mr North saying that. If that is the case, then they have redress. Let us have the people who are colluding or threatening named and put out in the open. Let us investigate.

709. You say at the top of your second page that it is important not to introduce legislation which is impractical or unenforceable and that we have too many examples in place already. Could you give the Committee some examples of legislation which in your judgment is impractical or unenforceable because that is quite an important area and we need to get the legislation right.

(*Mr Cracknell*) I do not think there are so many in the area of food safety. There is this mix, particularly in many EEC Directives. If I might quote the Minced Meat Directive, which purports to be a hygiene directive, it then goes into a lot of detail about the compositional standards, collagen and the like. I think it is important that we keep focused about food safety, certainly in our sector, rather than getting into compositional arguments and the mix of the two I think becomes difficult.

710. Your principal difficulty is with European legislation?

(*Mr Cracknell*) Yes. Clearly, we would support food safety to the maximum.

Mrs Organ

711. You refer to the issue of the Assured British Meat Initiative and the supermarket quality assurance schemes as well as to the regulatory framework that we have been talking about earlier

[**Mrs Organ** *Cont*]
on which governs your industry. Do you believe these industry-led schemes and government regulations actually are improving the hygienic quality of meat and meat products or, as you have said in your written paper, are they simply just adding to your costs?

(*Mr Cracknell*) I think there are some and some. Far be it from me to sit here and suggest that my customers' schemes are simply adding costs. I think over the years the retailing industry has driven standards forward in the food industry, not only in the meat industry, but in terms of food safety, choice and range. Therefore, I think they have done a great service and have driven standards forwards. Many of our plants that are serving multiple retailers and multiple caterers or leading manufacturers will all conform to EFSIS standards and the like and need have nothing to fear. I think we are concerned about ABM. I speak as a director of ABM with Sir David Naish. We are worried that it is another lump of bureaucracy that is going to cost the industry money without delivering any added value. I think Assured British Meat is only a means of trying to link together all the varying, sometimes apparently competing, quality schemes like FABBL and FAB pigs and food company schemes. I think it is time there was an attempt to say, "Well, these are all within the meat industry chain and we are going to have a link." Assured British Meat is no more than that and I know certainly the farmers, the retailers and the processors will fight to make sure it does not become bureaucratic. There is a worry that some schemes of assurance are expensive and become a cost. I was aware of the Chairman's first question to Sir David Naish. I am sure I shall be suffering from it for some weeks to come. Clearly, it costs £75 for a farmer to become a member of Farm Assured British Beef and Lamb. It has been a struggle to get farmers to join that. The NFU and us are missionaries in that sense. A lot of farmers say no. I do not think £75 to have a shiny badge and say, "I do the job properly" is too much money at all but clearly there is a concern that a proliferation of the schemes will add cost.

712. You have made it quite clear in your written evidence to us that you feel slight rancour that the livestock producers are the only ones that are not operating under licence. Everybody else in the food chain is. You make it quite clear that you think that they should either be licensed or inspected. You heard David Naish when he was asked. He said, no; he wants a voluntary route; that there is plenty of regulation and animal welfare inspection in the farms and he does not need it. To go back to the other point that you made earlier, any regulation tends to put the costs back on to the producer. As you will appreciate, farmers at present are bearing many other costs. Is that what you really want to see, that they should be licensed, regulated and enforced in that way?

(*Mr Bowes*) The meat industry is coming from a position of being flat on our backs because of BSE, as everyone is aware. Every element of our process other than our farms is licensed: the lorry driver, the slaughterman, the meat inspector, the vet. The plant is licensed. We deliver with our EU licence number on our products and retail packs to our customers. My company has gone down a totally independent route of freedom foods so that all of our farms are freedom food approved and totally independent. We feel that that gives a bit more consumer confidence. We believe that a fully licensed product for the food chain would help with more consumer confidence.

713. Would that be all farmers? For instance, in the Forest of Dean, there are quite a few smallholders that will have three sheep or they may be arable with half a dozen ducks.

(*Mr Cracknell*) We would certainly say it would be all livestock. It could be done by a levy of course, in which case the man who only had three sheep would pay a lot less than the man with 3,000. Again, I think we are a bit caught between when we wrote our evidence and today. Assured British Meat has emerged and a revitalised FABBL has emerged. In the pig industry now, 80 per cent of pigs are actually farm assured. There have been significant advances in using the voluntary sector. I must say that the jury is out in the cattle and sheep sector in particular in England and Wales, not so much in Scotland where there has been a lot more government subsidy thrown at the whole question of farm assurance; nor indeed in Northern Ireland. We will have to go on and try and persuade them voluntarily but if that fails our customers want to know—and indeed their customers, our customers being the retailers and their customers being the consumers—and they want assurance that the meat is not only safe, which by and large we can provide them with, but that certain animal welfare concerns have been taken care of and that the farmers are farming with proper consideration for the environment etc., which are all enshrined in FABBL. If farmers will not do that basic thing voluntarily, they will have to be told it is going to be compulsory.

714. You do not believe that at present the regulations that are in place—namely animal welfare inspection and the other regulations, the fact that they have to bring their animals to slaughter in a clean and dry conditions—are enough?

(*Mr Cracknell*) I believe that 99.99 per cent of farmers obey all the regulations and would sail through any farm inspection, but they are reluctant to part with £75 voluntarily. Somehow or other, we have to convince them that it is money well invested. If we do not convince them, then our members would like the government to consider going down the legislation route.

Chairman

715. So you scourges of bureaucracy wish to impose a whole new bureaucracy on the farmers. It is very difficult to understand.

(*Mr Cracknell*) The bureaucracy is going to be in place voluntarily. It is a question of collecting the money, I think.

Mrs Organ

716. So you just want another revenue for government? Is that what we are doing this for?

(*Mr Cracknell*) No. £75 covers the cost of the inspector going to the farm from whichever inspection agency he comes. The farmer has to pay that now to whichever inspection agency is used.

[**Mrs Organ** *Cont*]

Chairman: I would certainly like to pursue this matter with you but we are out of time. There is one other issue we wanted to raise with you today, which is research and development and slaughterhouse practices. Those are essentially technical issues and perhaps we can write to you and receive some written evidence on those issues. Thank you for your time.

Supplementary Memorandum submitted by the Federation of Fresh Meat Wholesalers (C92)

Thank you for your letter enclosing the transcript of evidence and asking for checks on inaccuracies in printing or in reporting. I return a transcript only of the pages on which Mr Cracknell or Mr Bowes have made amendments.

In checking the script, Ashley Bowes has made further observations which he believes will help to amplify the answers he gave at the time. They are as follows:

CONSUMER EDUCATION

We were concerned that the Government White Paper did not place enough emphasis on educating consumers of this and future generations on hygiene standards in handling products purchased from retailers, when up to that point the product has been carefully controlled by veterinarians, meat inspectors, plant quality control systems and the cold chain.

When the consumer handles the goods between purchase and consumption, the meat industry loses control, but remains liable and identified by the plant number on the pack. Consumers have no temperature control in their cars or on public transport. General hygiene standards are not so widely observed nowadays since domestic science has generally been dropped from the educational curriculum. This has led to risks being taken over hand washing; the preparation, handling and storage of cooked and uncooked meat in refrigerators without temperature monitoring, and the hazards of microwave cooking. For these reasons we strongly urge that the FSA makes certain that future consumers are basically well educated about food and hygiene standards.

COSTS

We cannot accept further increases in our costs. We currently pay for the policing of our industry by the MHS, but at the same time we are under extreme quality control pressures from our retailers at home, and customers in importing countries such as Japan, Germany, Denmark and the USA. Additionally industry pays for residue testing costs, the Meat and Livestock Commission which organises much of our industry R & D, and the cost of the controlled disposal of offals and waste by rendering companies. Any further increase in costs will inevitably result in significant increases in cheaper, and less controlled, meat being imported for sale to our consumers.

COLLUSION WITH THE MHS

We stressed that we do not believe that there is collusion between MHS' OVS and meat plants. It would be more accurate to say that the majority of plants work together with the MHS to achieve higher standards which is the right way forward. FFMW supported the introduction of a single standard and one controlling body for the meat industry to ensure an even handed interpretation of regulations which was not being achieved by the more than 300 Local Authorities with meat plants in their local areas.

9 February 1998

Supplementary Memorandum submitted by the Federation of Fresh Meat Wholesalers (C96)

You asked for an additional memorandum covering the following questions:

- How much is the slaughterhouse industry investing in R&D of new technologies to improve practices in abattoirs relating to meat hygiene?
- What developments have been introduced recently? What other developments appear most promising?

In terms of improved technology in the slaughtering industry R&D is undertaken for the sector as a whole by the Meat and Livestock Commission who have a booklet outlining their current projects. Each slaughtering company also devotes a proportion of its resources to improving operational efficiency and standards as a matter of commercial judgement, and this is an ongoing exercise. Every slaughterhouse is bespoke and therefore develops in a different way, changing according to its needs and new techniques and equipment availability. It is therefore not possible to put a figure to R&D of new technology, but collectively it must be a considerable sum.

Developments currently under close study and which offer possibilities of progress include HACCP, which we are promoting in all meat plants on a voluntary basis; the gas stunning of pigs; electrical stunning of cattle; steam pasteurisation of carcases; electrical stimulation of carcases, and H bone hanging of beef carcases for maturation. Other developing areas which may impinge on safety overall include traceability, which reflects on hygiene standards; recycling of packaging; effluent control and disposal, and anything associated with environmental issues.

12 February 1998

Memorandum submitted by the Joint Hospitality Industry Congress (C85)

INTRODUCTION

The Hospitality Industry

Hospitality, which is defined as "the serviced provision of food, beverages, accommodation, leisure and other facilities purchased outside the home" is one of the United Kingdom's largest industries. However, the range and scope of the industry goes far beyond what is normally regarded as tourism, for in addition to providing "leisure" eating and drinking facilities for members of the general public, it also provides sustenance for those at work, patients in hospitals and nursing homes and students in full and part time education.

- Cafes, clubs, hotels, public houses, restaurants, etc. in the United Kingdom number over 300,000 (1), approximately 80 per cent of which are independently owned and operated.
- The industry employs over 2.5 million people (about 10 per cent of the total United Kingdom workforce), and generates a revenue of £50 billion per annum (2).
- Annual foreign earnings are in the region of £12.5 billion (3).
- The small and medium size enterprise nature of the hospitality sector is demonstrated by the simple average that less than nine staff are employed per outlet.
- One in five of all new jobs are created in the hospitality industry (4).

The Joint Hospitality Industry Congress

The Joint Hospitality Industry Congress (JHIC) was established in 1992 to provide a forum for all the leading national trade associations and professional bodies of the industry to discuss issues of common interest. Current JHIC members are:

Association of Multiple Licensed Retailers
Brewers and Licensed Retailers Association
British Holiday & Home Parks Association
British Hospitality Association
British Institute of Innkeeping
British Entertainment & Discotheque Association
Business in Sport & Leisure
Council for Hospitality Management Education
Hospitality Training Foundation
Hotel & Catering International Management Association
Local Authority Caterers Association
Meetings Industry Association
Restaurateurs Association of Great Britain

The JHIC members represent approximately 100,000 outlets.

The JHIC welcomes any enquiry into food safety and the appropriateness of the methods and resources employed to minimise food safety risk at the various points of the food chain.

Food Supply To Caterers

In the hospitality industry we are dependent on our reputations and the repeat visits of our guests. In the eating out sector we are constantly in the hands of these customers as to whether they chose to eat with us. Customers satisfaction is achieved by meeting guest expectation as to the quality and safety of the food plus value for money and hospitality.

- Like the domestic consumer, caterers are end users in the food supply chain.
- Many proprietors will buy from reputable local suppliers to a perceived quality and price. Some larger operators will have more formalised purchasing procedures linked to technical quality assurance systems.
- Operators are dependent upon their suppliers to deliver product of an appropriate standard relative to food safety.
- Caterers inherit many of the inadequacies of the supply chain up to their back door. On average a third of chickens supplied are contaminated with salmonella (5) and a higher percentage with campylobacter (6). In addition, 7,000 eggs per day are likely to be infected with salmonella (7 & 8) and, of course, beef and lamb have the potential for bringing E.coli 0157 into kitchens.
- The emergence of more virulent organisms poses fresh threats which contribute to the specific causes of food poisoning being a moving target. There needs to be continuous awareness that counter measures may need to be re-aligned to take account of these changes.
- The rise in contamination in the animal reservoir and the food supply in the past 10 to 15 years, particularly the emergency of Salmonella enteritidis in the poultry broiler and layer flocks, has presented a significant challenge to the hospitality industry.
- We welcome the new "plough-to-plate" approach if it will reduce the levels of contamination in the food supply.

Industry Initiatives

The industry has recognised the challenge that this presents and publishes a range of technical documents and information sheets (9 and 10). Often these entail collaboration with the Department of Health (DH) and Local Authorities Co-ordinating Body on Food and Trading Standards (LACOTS).

Recognising the importance of a HACCP based approach to the control of food safety, the industry produced guides to hazard analysis targeted at small businesses. These were initiated well in advance of the legal requirement in the Hygiene of Feedstuffs Directive 93/43/EEC.

- Work by an industry group, under the auspices of the Campden and Chorleywood Food Research Association, produced a document which was adopted and published in 1994, by the DH as "Assured Safe Catering: A Management System for Hazard Analysis" (11).
- The following year, a JHIC member association published "SAFE—Systematic Assessment of Food Environment: A Practical Guide to Hazard Analysis for Restaurateurs and Caterers" (12). This set out to provide more background information in a more user friendly fashion.

The industry fully supported the structure and content of the EC Directive and the resultant UK Regulations (13). Its requirement for hazard analysis, based on the hazard analysis critical control point concept, is clearly the correct approach. The mandatory requirement for supervision and instruction and/or training in food hygiene matters commensurate with work activities, is particularly supported. The directive also allowed for industry guides to good hygiene practice.

- The JHIC readily accepted this opportunity and produced the first such guide in the entire EU. This was recognised by the Secretary of State for Health and published in September 1995 (14) to coincide with the implementation of the Directive in the UK. Until the last few months of 1997 the Catering Guide was still the only guide produced by any UK industry sector.
- In 1997, further work by the JHIC also produced a supplement to the catering Guide in the form of advice on the Food Safety (Temperature Control) Regulations 1995.
- Both of these initiatives involved close collaboration between LACOTS and DH and a wide public consultation, including consumer groups.
- A prime element of the Guide clearly sets out the stages of training required, for the range of categories of staff employed in catering establishments.

LEGISLATIVE FRAMEWORK

It is the industry's view that the current legislative structure, built around the Food Safety Act 1990, is both appropriate and sufficient. As the influences on the trends in reported cases of food poisoning are multi faceted (5), it will take time for genuine change to occur. The Infectious Intestinal Disease (IID) study, undertaken by DH, should enhance knowledge in this respect. Its findings should be made available as soon as possible.

Environmental Health Officers have a risk assessment procedure, set down by the Government, for targeting higher risk establishments (15). This takes into account, for instance, the consumers at risk, the foods handled, structure of premises but also confidence in management/control systems. It is recognised that not all units are up to the best practices of the responsible operators. The effort of enforcement should be concentrated at these areas. The Government should allocate ring-fenced funding to target those operators falling below acceptable standards.

The JHIC supports the proposals for a Food Standards Agency (FSA), particularly to address:

- management of the plough-to-date philosophy;
- continuing research into the true incidence and causes of food poisoning;
- one-stop-shop for information;
- consistency of advice to industry and consumers; and
- consistency of enforcement.

EDUCATION AND TRAINING

Food is essential for life, hence it seems natural to us that "food appreciation"—food safety culinary knowledge and food technology—should be part of everyone's education. Its more focused inclusion in the National Curriculum would be a route for national impact on food hygiene. Within education, the withdrawal of mandatory funding, through the Further Education Funding Council, for all recognised food hygiene training courses, is clearly a retrograde step.

CONCLUSION

JHIC member organisations will continue to vigilantly play their part in enhancing the safety of the food they serve. It is the industry's constant endeavour to provide safe food which meets their customers' expectations and enhances its reputation. Technical improvements in the supply chain and external formal training and education should create appropriate enhanced circumstances to make industry's goals achievable. It looks forward to working in partnership with the FSA.

19 January 1998

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Examination of Witnesses

MR JEREMY LOGIE, Chief Executive, British Hospitality Association, MR TOM MILLER, Brewers' and Licensed Retailers' Association, MR CLIVE WADEY, Hotel and Catering International Management Association, and MR JOHN DYSON, British Hospitality Association, Joint Hospitality Industry Congress, examined.

Chairman

717. Mr Logie, welcome to the session. I wonder if I could begin by asking you to introduce your team to the Committee?

(*Mr Logie*) Yes indeed. I am Jeremy Logie, the chief executive of the British Hospitality Association, one of the member organisations that we are representing today. To my left we have John Dyson, who is also representing our Association today. To my immediate right is Tom Miller who is representing the Brewers' and Licensed Retailers' Association. To the far right is Clive Wadey, representing the HCIMA which is the professional association for our industry.

718. Thank you for that and thank you also for your written memorandum which we appreciate. It gives us quite a lot of information about the Congress. Could you just help us by saying what are your overall aims and objectives? What do you really exist to do as an organisation? How much of the work relates to food safety? We imagine that you rely quite a lot on technical expertise from elsewhere in the food chain, government and local authorities, in relation to safety issues.

(*Mr Logie*) If I can just briefly introduce the Joint Hospitality Industry Congress, it comprises 13 national organisations, nine of which are trade associations such as my own and the BLRA. Two are professional institutes and two are training and educational bodies. This body called the Joint Hospitality Industry Congress is not an association in its own right; it is a collection of other associations. Some of its roles are to facilitate exchange of information, to identify public affair issues of concern and to identify the scope for common positions on public affairs. That is really why it was formed, to do that and a few other things. Related to the food safety issue, back in 1996, JHIC set up a food safety working group that published the first industry guide of any industry in this country or indeed in Europe to complement the regulations when they became law. Three of its members are actually on our panel today, so that is a brief introduction to the team, if you like, and who we stand for.

719. How much of your work involves food safety?

(*Mr Logie*) This working group do whatever is necessary from time to time and that was one of the tasks they performed. For example, they met the other week to present for today. It is a working group that deals with food safety issues as and when they are necessary.

(*Mr Wadey*) Can I just add something? The member organisations of JHIC, and I am a member of BHA, each have their technical working groups and they will look at food safety and health and safety specifically for those member organisations, so there is a focus to look at food safety by these.

720. We have done the right thing in asking you to give evidence and not the individual, constituent parts?

(*Mr Logie*) It would have taken a lot longer. I think you have got a good mix of the industry here.

Mr Collins

721. You say in your evidence that, in the industry's view, the current legislative structure built around the Food Safety Act 1990 is both appropriate and sufficient. You also indicate you support the Government's proposals for a Food Standards Agency. Why?

(*Mr Logie*) In general, we support the principles of the White Paper and, in the main, we support the guiding principles, although we have a few concerns. We do believe that the current legislation is adequate as it stands and if it is actually implemented in the way that is intended.

722. Your support of the Food Standards Agency is principally because you think it will more effectively enforce existing legislation rather than because you think new regulations will?

(*Mr Logie*) It has the potential to be more effective.

723. You say in particular that two of the reasons why you support it are because you think it will produce consistency of advice to industry and consumers and consistency of enforcement. What leads you to the conclusion that it will succeed in those things?

(*Mr Miller*) In terms of consistency, clearly what the consumers are wanting is simple, clear advice from one source as opposed to perhaps a myriad at the moment. Our anticipation is, because it is to all intents and purposes a one stop shop, it then has a greater opportunity for that consistency.

724. You would wish the Food Standards Agency to provide the definitive and, if possible, sole advice to consumers and others on these matters?

(*Mr Miller*) That certainly would not cause a problem as far as we are concerned, but one of the difficulties at the moment is where does the consumer go for the Chief Medical Officer's advice? Is there a clear route between that advice and the consumer? We are anticipating that the Food Standards Agency will provide that.

725. Let us turn to the issue of costs then because of course the Government has indicated that it may seek to pay for some or all of the costs of the agency by licensing food businesses and introducing fees. In fact, they floated the idea of a fee of £100 per premise per year, raising about £60 million a year. What is your perspective on that?

(*Mr Logie*) We have to be reasonable and recognise that things cost money. It is not unreasonable for people in the industry to pay towards that. We would hope that the whole food chain would make a contribution, not just the end part of it, the catering business. I think the other

[**Mr Collins** *Cont*]

point to make is that a reasonable charge perhaps differs if you are a very small business. As you will probably be aware, our industry comprises literally hundreds of thousands of tiny businesses employing five, ten or twenty people, and it is those businesses that I would be most concerned about imposing a charge on which is more than what I would call reasonable.

726. Do you have an idea of what you would regard as reasonable? Are you talking about a percentage of turnover or an addition to business rates? How would you suggest you would calculate affordability?

(*Mr Logie*) I would keep it simple. If it ended up at £100 I think that would be reasonable. My concern is that it might end up at a much higher figure.

727. Finally on this, we heard earlier from farmers and others who consistently say to us that any charge that is levied at any point in the food chain always gets passed down to them in the end. What is your view on that?

(*Mr Logie*) I think whatever charge is likely to be imposed will be charged to the end user, the customer, who buys a meal or whatever. I am afraid that is inevitable because businesses can only absorb a certain number of costs and we are already quite heavily taxed in our industry.

Mrs Organ

728. May I ask about food poisoning outbreaks? There has been lots of stuff in the news recently about a million cases last year and they are only the reported ones. We know that the incidence may be double that. The statistics on general outbreaks of infectious intestinal disease between 1992 and 1994 show that half of these are connected with what your industry is concerned with. That is, the catering premises, hotels, canteens and restaurants, also concerned with functions where large numbers of people gather together, weddings, birthday parties and so on. Food prepared in private houses obviously also causes a large number of outbreaks. We appreciate that people do not therefore register a single outbreak as a result of a family meal prepared two evenings earlier and that obviously it is easier to detect when it is large numbers from catering outlets and from parties. Could you give us some comments on the scale of this problem and if that is how you interpret the figures?

(*Mr Dyson*) First of all, we had a look at the statistics produced by the Communicable Diseases Surveillance Centre at Colindale, the Government's own agency, and the surveys they carried out. In 1992-94, there were 203,767 cases of intestinal infections, food-borne diseases. Of those, there were 1,590 general outbreaks of which half were food-borne and half of those again actually related to the catering industry, so you are down to about 320 general outbreaks. The average number of people in the general outbreak is less than four, so in fact to say that perhaps the catering industry is responsible for 50 per cent of food poisoning outbreaks is not quite the case. The statistics are misleading. We would take the line that there is a lot of investigation to be done on those statistics particularly on the way that general practitioners look at food poisoning and we welcome the work the Department of Health is going to do in carrying out investigations.

729. Given that we appreciate that the Great British public tends to be a little bit more sociable and we are going out more and your businesses are flourishing as a result of social habits changing, can we therefore see a pattern of such outbreaks rising and, if so, what can your industry do to counteract that?

(*Mr Dyson*) Well, it is true that people do eat out more. Perhaps the need all round is for education and training at all levels including for people who actually produce food at home because food poisoning occurs at home as well as elsewhere and I think really the development of education and training at all levels throughout the food chain from school children and all the way through is going to be the answer to helping to reduce the incidence of food poisoning.

Mrs Organ: One point my colleague raised just before you entered the room is the correlation between the change in our social lives and where previously it was women who prepared food in the home now, increasingly, men are preparing food in the home, but I will let that go!

Mr Mitchell: You wish!

Mrs Organ

730. It is recognised that it is not just about the education of the general public and not just about education as far as the National Curriculum is concerned on general standards of hygiene, the industry itself has an onus to improve its own training and its own standards and it is recognised that not all units are up to the best practice of the responsible operators. Could you give me some outline of the main problems that lie within the catering sector. Is it to do with the size or type of business or is it the management?

(*Mr Wadey*) It is interesting for the JHIC and the organisations therein that whilst we represent the catering industry, we do not represent the whole of the catering industry unfortunately. There are a lot of small and medium-sized organisations that are not members, that do not have access to the technical information and guidance that JHIC and member organisations produce, nor are they big enough to have their own technical resources. The company I work for employs a number of EHOs and technologists who work for the company using information which our organisation produces and then producing their own. And, of course, my own organisation employs something like 26,000 people in the United Kingdom, but they are human beings and things can go wrong. What we need to do is use our own information and minimise things when they do go wrong because inevitably they will. It is these other organisations which are not members of JHIC that have no access to this information and they have to rely perhaps on their local authority environmental health officer for advice. Then if they get it wrong or get the wrong sort of advice they might end up being prosecuted as well. The FSA want to look at how to get more information to smaller organisations that do not have access to JHIC and member organisations and have not got

[**Mrs Organ** *Cont*]
the resources to employ their own EHOs or employ a consultant (because there are a lot of consultants around these days). I think that is part of the issue.

731. Can you tell us where the main problems lie in the catering industry? Is there a correlation between size or type? Is there any pattern that you can see?

(*Mr Dyson*) Are you talking about the size and type of the organisation concerned?

732. Yes, not of the outbreak.

(*Mr Dyson*) I do not think so. I think at the end of the day a lot of large organisations are often employing small numbers of people spread about all over the place, therefore, it is not particularly the case that a large organisation is focused in one spot, it is usually a smaller number of people spread around the United Kingdom. Inevitably the more food that is produced statistically there is a greater chance but often, as Clive has just said, the larger organisations have their own technical resources and we are keen to try and help the smaller businesses which is why organisations like JHIC have produced documents like *SAFE* which have helped industry develop safe systems to reduce or minimise food poisoning.

733. One of the things we have been talking about with all the other members along the food chain is the fact that they are increasingly regulated or licensed. Would you wish to see therefore—because as you say not everybody who is involved in food retail or catering is actually a member of the JHIC—would you like to see increased regulation of those that are not within your federation and would like to see much greater regulation because otherwise they are bringing your whole industry down?

(*Mr Wadey*) I think there is possibly an argument to say that is the area on which local authority enforcement needs to focus its activity. Accepting that larger organisations have access to information but these people do not, they might go on food hygiene courses, but this is part of the problem. We might know what to prepare and carry out a hazard analysis is but the corner shop or restaurant, the one-man operator will possibly not have a clue. He may not be visited very often by an EHO so where does he go for this advice? There is a lot of information available but I do not think it goes out to these people. You might get it in your retail store. There are different avenues, it is not only the FSA producing this information. Maybe they could co-ordinate the information available and make sure it is available in those areas where it can be obtained by the people who need it.

(*Mr Dyson*) I think we are looking for consistency of enforcement and we think that the FSA has got a great opportunity to help on that and I think that the reserved powers that the FSA would have to ensure that where local authorities are not carrying out the visits that they should be carrying out that they are doing so are going to be very useful indeed and having local authority liaison units within the FSA will also help considerably. It is not more prescription; it is making sure that there is consistency of enforcement right across the country.

Mrs Organ: Thank you for that.

Mr Marsden

734. Very briefly, as you have already started to cover it, both independently and together with other organisations you have produced some very good publications and the information is clearly there. As you start to talk about it, the problem comes down to actual training, practical training, and obviously also enforcing it as well. Is there any other constructive advice, suggestions and so forth you have come up with in terms of trying to get these messages through? As you say, you can come up with an admirable publication but getting someone to sit down and read and digest and understand it is hard when there is work to be done and bills to be paid.

(*Mr Logie*) You are absolutely right, the industry is enormous, it has over 300,000 units across the country and, as we have mentioned a number of times, some of them are tiny businesses, they are not members of things and the difficulties are real. The only contact they might have is with an EHO and if we can encourage them with if not training then by providing them with information and advice and perhaps saying, "I'll come back and test you"—although that is perhaps naive—that encouragement will be terribly useful for those businesses because that is the only contact they have.

735. Do you have any procedures for monitoring the effectiveness of that information?

(*Mr Logie*) Definitely, yes, across the United Kingdom.

736. Food handlers can be a significant vector of infection within the catering sector. How are you able to ensure that, in a workforce with a high turnover, staff have received the appropriate level of training? Do local authorities monitor the training provided by food businesses to their staff in food hygiene?

(*Mr Dyson*) Yes. There is movement within the industry of the workforce rather than people moving in and out of the industry. They are moving around so a lot of organisations have invested in carrying out certificated training through people like the Royal Institute of Public Health and Hygiene and the Chartered Institute of Environmental Health. They are qualifications for people moving around within the industry and providing you carry out that level of training to the food handlers you are training for other parts of the industry, the more that is done the more it will cascade through. We do get people who move in and then move out and they are moving perhaps to smaller businesses and that way you are getting a cascade movement rather than people dropping out of the industry.

Chairman: Ms Keeble wants to ask about salmonella. If we can do that first and come back to training.

Ms Keeble

737. One specific issue has been of concern for some time and that is salmonella in eggs and, as you know, the Chief Medical Officer has issued advice about the consumption of raw and lightly-cooked eggs and egg dishes. How widespread is the use of raw eggs in catering in particular in preparing mayonnaise and can you tell us whether it is going up or going down?

[Ms Keeble *Cont*]

(*Mr Miller*) Perhaps I can answer that. We do not have a specific handle on the figures. Indeed, it is one of the reasons why we have been supporting particularly the proposed survey that the microbiological food surveillance group within MAFF proposes to carry out. It was actually published in a programme of work in November last year.

738. Are you concerned about the use of raw eggs in preparing mayonnaise that is used by your professional catering companies? Is it a problem?

(*Mr Miller*) Raw eggs will undoubtedly have the opportunity of being infected with salmonella.

739. Do you use them in catering for functions and for use in sandwiches and stuff like that?

(*Mr Miller*) We would be urging people to be using commercially produced mayonnaise that is either made with pasteurised egg or has been actually pasteurised itself so that the problem is not there.

740. Because I understand that figures show that 25 per cent of all *Salmonella Enteritidis* PT4 food poisoning outbreaks between 1989 and 1996 were caused by raw eggs and egg dishes. Where would that illness come from?

(*Mr Miller*) I am sorry, I am not familiar with the statistics.

Ms Keeble: 25 cent of all *Salmonella Enteritidis* PT4 food poisoning outbreaks between 1989 and 1996 were caused by raw eggs and egg dishes.

Chairman: These are PHLS figures.

Ms Keeble

741. I am sorry, I should have said that, yes.

(*Mr Miller*) Clearly, I cannot dispute those figures and this is why we would be urging people to be using pasteurised eggs in those situations.

742. I can understand you urging people to do things but the thing is are caterers currently using raw eggs or are they using egg dishes which are likely to cause problems if they are left out for too long?

(*Mr Dyson*) The Chief Medical Officer's advice is very clear in that where dishes do not receive complete heat treatment then you should not use raw egg. The Food Standards Agency will have great effect in getting that message through, we believe. A lot of organisations have moved away from using raw egg in dishes like hollandaise and like mayonnaise where they are not receiving complete heat treatment and it is very important that organisations do do that. Getting that message through, as Tom said earlier, to the small business out in the street is quite difficult because I understand that they use raw eggs to make a fried egg and it is inevitable that they are going to use them for other dishes.

(*Mr Wadey*) The organisation I work for says that you do not use shelled eggs in uncooked products and we are moving towards that even in cooked products by using pasteurised liquid egg. It is the smaller operators that still feel that using raw egg in mayonnaise makes the best product. So it is the education of those people in the hazards of doing that.

743. One other thing that a previous witness said was about the problem caused by using contaminated spices and these were often on cold dishes. They were used to flavour up dishes often those which had mayonnaise on as well. Is that, in fact, a serious problem or not? Is it a growing problem because people are not familiar with how to use spices?

(*Mr Dyson*) I think it is a limited problem in itself. I think it comes down to control on importation of spices because there is potential for contamination of spices in the country of origin and making sure that samples are carried out on spices at port of entry would minimise that risk.

744. Are you aware that it is a problem?

(*Mr Dyson*) I am aware that it is a potential problem but it has not, as far as we are aware, been a large problem.

Chairman: We will go back to where we were, if we may. Mr Marsden?

Mr Marsden

745. We were talking about industry initiatives being proactive in trying to reduce the incidence of food poisoning and better food handling and so forth. In particular would you support a more comprehensive qualification, if you like, for food handlers? Following on from your certificates you were talking about typically people may move between jobs fairly quickly in the same food handling jobs and these people could very quickly build up a comprehensive qualification within the industry. Is it already there or how can it be expanded if it is already there?

(*Mr Logie*) The certification is perfectly adequate. Whether it should be enforced and anyone handling food should be certificated to that standard, that is a very interesting question.

(*Mr Wadey*) A lot of the regulations do not say you have to be formally trained—it is trained and/or supervised to a level commensurate with your work activity. To my point of view that is perfectly adequate if it is done properly. Part of the issue is who is checking whether this training is carried out and how effective that training is, the quality of training and how much can people remember? We have to keep reminding people.

(*Mr Miller*) Just to add to the point about the degree of training. On the levels of training one of the things we did specifically in the industry side against that rather general point in the regulations was to set out a programme relative to each person's job within the organisation through essential food hygiene, hygiene awareness and instruction and then formal certification and training so there is a very clear format there.

746. So following on from Mr Logie's interpretation of my question, would you actually agree that it should either be a lot stricter or there should be enforcement for food handlers to take qualifications?

[**Mr Marsden** *Cont*]

(*Mr Miller*) I think we would be saying there should be enforcement in that the structure is there, indeed the regulations set out that instruction, supervision, training section as a requirement and it needs to be enforced.

747. Would you also extend that to, for instance, the use of posters and so on? I remember when we visited a slaughterhouse some of the actual posters on the wall were from MHS and so forth to give guidance to people in their industry to say these are the signs you should be looking out for clean cattle for instance. Again it was something that was quite clear and also a good sign that people were following practical advice because it was there up in lights. Would you agree with that?

(*Mr Dyson*) I think posters are a good idea but they have limited value in that they are only there to reinforce the training that has been carried out. They are an excellent idea, good visual graphics, but not for anything other than for reinforcement. Training is required face to face with the trainer.

748. Coming back you mentioned before about the statistics available of where the food poisoning is breaking out by type or by food or by producer, whatever it is. Would you be prepared to look more deeply into that as the organisation JHIC to see if you can identify particular trends, problems, issues? You are generalising at the moment and saying that the smaller producers and food handling organisations may be the problem. Have you got statistics to back that up?

(*Mr Miller*) To answer that question it is difficult in terms of the collection of the information, as we have already identified in respect of the existing systems for the Communicable Diseases Surveillance Centre. I think it would be very difficult for us to get to a concrete set of statistics that we could then analyse. That is not to say that we could not and would not be prepared to collaborate in that but we need a good reporting system in the first place. Once we have got sound statistics then we would be happy to help with that. It is this difficulty of what do we start with and the interpretation of that and hopefully the Department of Health IID study which has been completed and should be reported, we hope, soon will help to give a handle on these good statistics.

(*Mr Wadey*) Just to reinforce that, we would be very hard pressed to do better than the DH and CDSC. We would obviously be happy to work with them in any way we could. They have experts looking at figures on these outbreaks all the time and I do not think we could come up with anything better, to be honest.

Mr Marsden: Again, it is clear the direction the Government is looking at is a more proactive stance by individual industries. That unfortunately sometimes means shouldering the burden of additional costs but if that proactivity can be early enough they can have an input into the way certain regulations are made and hopefully they will be a lot happier with it. Again, if you felt it appropriate to work with other organisations, I suggest maybe it would be useful to collate your own data and survey your own database in order to pursue that.

Chairman

749. That was a rhetorical question! I hope I did not miss this during the series of questions but I was concerned by one thing you said in your written memorandum on this subject. You said that the Further Education Funding Council had withdrawn mandatory funding for all recognised food hygiene training and you said that that was a retrograde step—and I share that view. How significant is that withdrawal of funding?

(*Mr Logie*) I think it is part of the more general issue of concern to our industry. Traditionally a lot of them like to call it training but I would use the word education, and it is being carried out in colleges of further education for our industry. We are very grateful for that but because funding is under threat there is an awful lot of cutting back going on in further education and this is a good example of that. It is of great concern. Of course the industry in the end has to take responsibility to do the training but it is jolly helpful to have some colleges helping out on that and funding that.

750. Some would say that all education is essentially vocational and I have great sympathy with this point of view that this is training to give a young person a skill to help them find a job and as such it is education and should be paid for by the taxpayer.

(*Mr Dyson*) At the end of the day a lot of people go to colleges of further education in the evening to obtain hygiene training qualifications and it is important that that avenue is available.

Mr Marsden

751. How much is that funding actually worth to the student in total?

(*Mr Miller*) We do not actually have those figures here with us but we could certainly submit the details to you.

752. The point being the same course could cost £100 a year and it helps if you put it into perspective as to how much it is worth to the student.

(*Mr Miller*) We would be very pleased to submit specific information on that.

Chairman

753. We would welcome further information on those courses. Two last small points, unless my colleagues have additional issues to raise. I notice what you said about the difficulty of getting information through to smaller companies in particular. When there were difficulties of enforcement in the meat sector the solution was to remove local authorities from the sector altogether and create a new body. Are you advocating that in your sector?

(*Mr Dyson*) Not under any circumstances. We are not suggesting for one minute that food enforcement and safety should be taken away from local authorities. We think that works quite well because each local authority has different problems in different areas and to produce a specialised central service for the myriad food services would be a potential disaster. What we are looking for is for the

[**Chairman** *Cont*]

FSA to achieve consistency of enforcement making sure that EHOs are given the right directions on enforcement, that the codes of practice are followed and where local authorities are not carrying out inspections and they are deemed to need some action against them action is taken.

754. Would you like to name and shame the failing local authorities?

(*Mr Dyson*) No!

(*Mr Wadey*) The current work that LACOTS is doing, we hope, will continue under the Food Standards Agency and be improved. Two of us here are EHOs so we are poachers turned gamekeepers or the other way round. I have worked for LACOTS as a commercial EHO and we are on the receiving end of advice from my local authority colleagues, because that is what they are, and that is where the service should stay. There perhaps needs to be some more co-ordination.

(*Mr Logie*) We could give you some amusing anecdotes of some extreme examples of where they ask for things to be done.

755. Given us an example.

(*Mr Logie*) One EHO walked into the cellar of a hotel and said the red wine bottles lined up in the racks were dirty and needed to be dusted! What can I say!

756. I bet the hotelier was not terribly pleased about that.

(*Mr Miller*) Also within the Food Standards Agency White Paper it does talk about the home authority principle and supporting that and we certainly would be wanting the home authority principle to be boosted and for all local authorities to have to be involved in the home authority principle.

757. There is universal support for that in your industry?

(*Mr Dyson*) We have had occasions where you go to a local authority asking them to get involved in the home authority principle and they say, "This is going to cost us, take time, take resources, we need to sit back and think about this." It can be quite difficult to persuade them to go down the route of the home authority principle, yet it is so valuable for ensuring consistency for a large organisation of a multi-sited nature in helping that food organisation manage its food safety.

758. The great mystery to me in this whole process is why the Northern Irish escape food poisoning to the extent they do? Do they eat at home more? Are your members less successful and flourishing in Northern Ireland?

(*Mr Miller*) That is a very interesting point. I am afraid, certainly from my personal point of view, I have virtually no knowledge of the Northern Irish situation.

(*Mr Wadey*) I think we have similar problems in Northern Ireland as we do in the rest of the United Kingdom. I do not see them as being any different. They have the same legislation of course but, no, I would not say— If they do not get food poisoning out there they are very fortunate, perhaps they do not report it.

Chairman: Perhaps the wives are still doing the cooking to get back to an earlier question! Gentlemen, thank you very much indeed. We are very grateful for the time and trouble you have taken.

Supplementary Memorandum submitted by the Joint Hospitality Industry Congress (C97)

FURTHER EDUCATION FUNDING COUNCIL—HYGIENE TRAINING

In November 1997, the Further Education Funding Council (FEFC) published a list of qualifications which would no longer attract FEFC funding when delivered by a college or college franchise. This list included a number of hygiene qualifications such as the Basic Certificates offered by the Chartered Institute of Environmental Health, the Royal Institute of Public Health and Hygiene and the Royal Society of Health. The Royal Society of Health Certificate in Food Hygiene Management was also excluded from the funding. Regulation 4(2)(d) of the Food Safety (General Hygiene) Regulations 1995 requires proprietors of food businesses to ensure that food handlers are supervised and instructed and/or trained in food hygiene matters commensurate with their work activities.

No clear explanation of the reasons for the withdrawal of funding for the programmes was given; it would appear that the FEFC took the view that employers and/or trainees should be required to bear the costs of any hygiene training. These courses, the average costs of which are in the order of £26, provide entry level instruction in the correct handling, storage and cooking of food and are tailored to specific sectors and roles, eg restaurants and food retail shops, cooks and washers-up. Some colleges will, of course, continue to offer training in hygiene matters; those offering courses leading up to food-related National Vocational Qualifications (NVQs) will have to do so.

There is a wider concern about the funding of FE courses. The key issue is that funding favours classroom-based training (it is cheaper to deliver than practical training). Additionally, colleges are tempted to offer courses which are attractive to potential students, but these may not include the practical skills needed by employers. As a result, much of the FE provision for the hospitality sector is based around General National Vocational Qualifications (GNVQs) which, despite their name, are not directly related to competence-based NVQs. It has been said that NVQs were developed by employers, for employers, whilst GNVQs were developed by educators, for delivery by educators. As a consequence, many college leavers do not now have the practical experience enjoyed by their counterparts, say 20 years ago. It is a widely held view in the hospitality industry that this will inevitably have a detrimental effect on hygiene awareness.

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HOUSE OF COMMONS SESSION 1997–98

AGRICULTURE COMMITTEE

FOOD SAFETY

MINUTES OF EVIDENCE

Tuesday 10 February 1998

MEAT AND LIVESTOCK COMMISSION
Mr Colin Maclean, Mr Mike Attenborough
and Ms Ruth Kirk-Wilson

MEAT HYGIENE SERVICE
Mr Johnston McNeill and Mr Peter Soul

ROYAL COLLEGE OF VETERINARY SURGEONS
Dr Lydia Brown, Mrs Jill Nute,
Dr Mac Johnston and Professor Phillip Duffus

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Members present:

Mr Peter Luff, in the Chair

Mr Tim Collins
Mr John Hayes
Mr Alan Hurst
Ms Sally Keeble
Mr Austin Mitchell
Mrs Diana Organ
Mr Mark Todd

Memorandum submitted by the Meat and Livestock Commission (C47)

The Agriculture Committee has invited comments upon those parts of its Terms of Reference of particular relevance to recipients.

The MLC is a public body, appointed by legislation, to help improve standards in the red meat and livestock industry in order to safeguard consumers. It therefore has a substantial interest in, and experience of, helping ensure food safety throughout the meat chain.

Because of its long experience since its establishment in 1967, it has worked closely with food safety agencies on many occasions. Most recently it has been involved in Government activity following the BSE outbreak and been closely collaborating in research for the Pennington enquiry into the *E.Coli* outbreak in Scotland and follow up action to the subsequent April 1997 Report.

CURRENT SITUATION

So far as the UK is concerned, there is cause for concern and a need for Government action, but the UK problem is unfortunately typical of that in most developed countries. This is because traditional forms of food preservation, such as freezing, smoking and other methods are less acceptable to consumers, who now seek fresh products free of additives and preservatives. The consumer trend to use processed meats and ready meals provides further potential for food poisoning episodes. Table 1 shows an increase in incidence of foodborne disease in GB from 1992–96 and shows increases in *Campylobacter, Escherichia coli 0157-H7* and specifically *Salmonella typhimurium DT104* with a corresponding drop in other *Salmonella* species and *Listeria*.

Incidence of specific food borne disease—GB

	1992	*1993*	*1994*	*1995*	*1996*
Causative organism:					
Campylobacter	43467	43423	48560	48279	48458
Salmonella species	34347	33569	30703	32824	32379
(NB typhimurium DT104)	(5562)	(5020)	(5814)	(7100)	(6093)
Verocytotoxic Escherichia coli 0157	585	504	653	1039	1166
Listeria monocytogenes	121	114	124	103	11

NB Figures for 1995–96 are provisional

Source: PHLS Communicable Disease Surveillance Centre

Scottish Centre for Infection and Environmental Health.

Modern food production and sourcing of raw materials operates on a global basis. Raw materials for animal feeds are imported into this country from around the world and act as a source of organisms which historically consumers would only meet during visits to exotic parts of the world. Materials traded under WTO rules move quite freely around the world.

Studies undertaken by MAFF have shown a varying level of contamination of a wide range of feed raw materials with *Salmonella*.

Intensification of animal production, with animals kept in high densities, often with access to their own faeces, ensures that the organisms are spread widely and are mixed constantly with other similar bacteria. Techniques designed to maintain health (eg feeding of drugs to suppress bacteria) ensure constant selection

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pressures on bacteria which may result in the emergence of resistant strains. This offers the opportunity for passage and for change in the genetic make up of the organisms and in some cases increases virulence. This is the case in *E.Coli 0157-H7* with incorporation of virulence factor DNA.

In addition to this, there is greater public authority awareness of food poisoning incidence, which has the effect of apparently increasing the frequency of food poisoning occurrences through more regular reporting outbreaks.

Demographic trends are not going to change quickly, so the exposure of the consumer is likely to continue. Either a process must be inserted which kills all bacteria in the food preparation process or alternatively a decrease in the exposure of the population to numerous organisms is required. The latter could be achieved with the incorporation and usage of international procedures such as Hazard Analysis Critical Control Point (HACCP) systems, so improving the hygiene performance at every stage in the production chain.

The above factors help to explain the apparent increase in food poisoning outbreaks. Consumers expect, and Government intends, to take effective action to minimise these threats to public health. Because of the effect of recent animal diseases upon the meat and livestock industry, MLC has a particularly strong interest in Government action that reinforces improved food safety.

GAPS IN CURRENT SCIENTIFIC UNDERSTANDING AND APPROPRIATE ACTION

Gaps in our knowledge exist concerning the epidemiology, pathogenesis, prevention and control of pathogenic organisms in farm livestock which may present a public health risk. To help counteract this, MLC has instigated a review of enteritis. Similar reviews are being carried out on respiratory disease in the pig and alternative management systems which affect animal health to identify areas most deserving of investigation. It is intended that research into all these three areas will be funded by industry and supervised by the Commission.

FOOD SAFETY

Clean Livestock

No animals displaying signs of disease, stress or injury may be transported to the auction market or abattoir.

Animals which are dirty, due to faeces and/or soil, must not be presented to the auction market or for slaughter. A recent initiative on the presentation of clean livestock has been supported by MLC; members of staff have attended and participated in meetings and roadshows organised by the Meat Hygiene Service for the abattoir sector and by the National Farmers' Union for producers, hauliers and auctioneers.

Practical guidelines for farmers, hauliers, auctioneers and abattoirs have been agreed by industry so that only clean livestock are consigned for market or slaughter. It is essential that dirty livestock should not be accepted for processing from now on.

Recently introduced transport legislation, particularly with regard to vehicle design, stocking density and journey length will help in further achieving high standards of cleanliness in transported stock.

The conditions of sale which auction markets operate can contribute to preventing the entry of dirty stock into the sale ring.

DECONTAMINATION OF CARCASES

It is unrealistic to expect to produce sterile carcases even with very careful removal of hides and fleeces and following recommended dressing procedures. There will always be a bacterial and fungal population on the surface of the meat originating from the hides and skins, the gut and from the operators, their tools, hands and arms and from the environment of the slaughterhouse. Contamination can, however, be kept to a minimum by following careful techniques in the dressing and preparation procedures; this is greatly helped by presentation of clean animals in the first place. Research indicates that trimming of affected areas is greatly preferable to attempts to wash off contaminating material. This tends to spread the contamination to other areas of the carcase unless it is deluged with water under pressure. This has an adverse effect on meat quality. Pasteurisation of carcases and the use of organic acid douches have shown promise in carcase decontamination. MLC is developing research protocols.

The Use of Antibiotics

There is a general acceptance that reliance on antibiotics in animal production may have exceeded acceptable levels over recent decades. This view has been exaggerated by some sectors of society particularly with regard to intensive production. However, there is no doubt that antibiotics over-used for treatment purposes and in-feed primarily for growth promotion and to some extent disease suppression—particularly in the poultry and pig industries—has given rise to genuine concern. Evidence of bacterial resistance to a range of antibiotics has been described in scientific publications for some time, but concerns are increasing as more and more cases come forward. The isolation of *Salmonella typhimurium* DT104 with resistance to as many as five antibiotics is a case in point. There is a clear need for a review of the use and role antibiotics—both for treatment and prophylactic purposes—in animal production and the likely effects on human health.

Feedback of Slaughterhouse Data

There is little or no published data on reasons for condemnation of meat in the slaughterhouse; these can alert the authorities to emerging diseases and indicate trends. Better recording and dissemination of information would also go a long way to removing the threat of unfit meat entering the human food chain.

Training

Training and re-training of personnel throughout the agricultural and food industries is essential if food safety standards are to be improved and maintained. For example, the understanding of HACCP principles and their application in the various sectors of industry—particularly in the slaughterhouse as recommended by the Joint Government Industry Working Party on Meat Hygiene in which MLC participated—would prove of immense value in helping keep food and food production safe.

Food Processing, Retailing, Catering and Domestic Food Safety

MLC responded quickly to the *E.Coli* outbreak in Scotland in late 1996 by providing information to the Pennington Group in the form of a comprehensive survey of hygiene practice in 600 retail shops throughout Great Britain.

MLC ran 90 seminars nationwide covering the Pennington Report for some 3,800 butchers this summer. These were undertaken with Chartered Institute of Environmental Health (CIEH) and the Royal Environmental Health Institute of Scotland (REHIS) covering the Report *E. Coli*, physical separation, licensing and HACCP. The objective was to enhance hygiene standards.

MLC are currently involved in submitting a detailed proposal to DoH to manage the introduction of a programme that would provide accelerated HACCP in all butchers' premises in England within a two year period.

Implications of Genetically Modified Organisms (GMOs) in the Food Chain

It is likely to be some considerable time before regulatory approval is sought for the marketing of food products from genetically modified farm animals. However, genetically modified crops are already being fed to farm animals.

MLC recognises that consumers may have some concerns about the use of genetically modified crops in animal feeds but believe that the current approval procedures are satisfactory. The consumption of animal products from animals fed such crops is most unlikely to present a possibility of risk to the health of the consumer. Since the animal products will not be themselves genetically modified, MLC sees no reason to require such products to be labelled at the point of sale.

Consumer choice is considered by MLC to be an important issue and hence labelling of foods containing GMOs is likely to be essential to provide consumers with that choice. MLC is generally in agreement with the labelling guidelines produced by the Institute of Grocery Distribution.

If labelling is to be a requirement, it must be implemented in an equitable way. For example, if a consumer wishes to avoid the consumption of products of GMOs, then all products containing any quantity of such product should be labelled. If secondary and tertiary products of GMOs are not required to be labelled, the primary product, sold as such to the consumer, will be unfairly disadvantaged. Similarly, if consumers are to be given choice, then information on the presence of products of GMOs should be presented in all cases where such products are offered to the consumer, including catering outlets.

It must be recognised that the implementation and enforcement of a requirement to label all foods containing products of GMOs will present enormous difficulties to industry. An importer of raw material may not know that it has been genetically modified and may have no way of checking.

A legislative requirement to label only primary products of GMOs at the point of sale is considered by MLC likely to mislead consumers. Therefore, the decision may need to be to label nothing or label everything containing products of GMOs.

Provided adequate regulatory and approval procedures are in place to consider each new GMO in relation to any possible risk to consumer safety, animal health and consumer choice, MLC sees no justification for excluding the use of genetically modified farm animals as a future option for the food industry.

SUMMARY

MLC believes food safety is among the most significant current consumer concerns. It welcomes the opportunity to work with Government on these. The Agriculture Committee's interest in establishing the extent of these is extremely timely. MLC is very ready to help the Committee in any aspect of its work.

17 October 1997

Examination of Witnesses

MR COLIN MACLEAN, Director General, MR MIKE ATTENBOROUGH, Technical Director, MS RUTH KIRK-WILSON, Head of Government Relations, Meat and Livestock Commission, examined.

Chairman

759. Mr Maclean, thank you very much indeed for coming along this morning; thank you for your written evidence as well. Can I start by asking you to introduce your colleagues?

(*Mr Maclean*) Yes. Good morning, Mr Chairman; thank you. I am Colin Maclean, Director General of the Meat and Livestock Commission; it is nice to be here and see you all. On my right is Mike Attenborough, the Technical Director of the Meat and Livestock Commission; and on my left is Mrs Ruth KirkWilson, who is the Government Relations Manager of the Commission.

760. Thank you, Mr Maclean. Given the position of the MLC, its statutory basis, its role in the meat industry, you are in a particularly good position to comment on the whole red meat production chain, right from the beginning to the end where the consumer actually gets his teeth into it. Where do you think the maximum effort should be made by all those involved in order to have the greatest possible reduction in the risk of pathogens in final products, as presented to the consumer?

(*Mr Maclean*) We think everybody should make a contribution, Chairman. If we try to preface our thoughts by saying, to cause a problem of food poisoning three things basically need to happen: you need a source of the microbe that will cause the problem; you need to multiply it normally to a level at which the dose is right to infect you; and, thirdly, you need to fail to kill it. Now you have to look down the food chain and explore it against those three criteria. Source of organism, therefore, we bring in feed raw materials from all round the world, and therefore we are now meeting organisms that we would not normally have met unless we went on exotic holidays; there is a source. Clearly, the second point is that, in breeding pyramids, where animals are multiplied down an agricultural system, clearly if there is either infection or these organisms are resident at the top of that pyramid that is obviously a more dangerous position than in the bottom of it. The third would be, obviously, dirty animals, if animals when they are going to be slaughtered are dirty then that is a source of potential infection. Abattoir dressing practices, or slaughter dressing practices, where the intestine, certainly, of the animal is penetrated, or the rectum is not properly sealed, then you could have a source of contamination. Clearly, moving on, cooking in manufacture is important, if one of the stages is killing the organism, then if you inadequately cook in manufacture that would obviously pose a problem. Following the cooking, you want to avoid cross-contamination, so that if there is any fresh material that is uncooked close to cooked material it can cross-contaminate, you want to avoid that. And then we have the chill chain; in other words, we start food off on a farm in Taunton, it is manufactured in Aberdeen and it is sold in London, and therefore we are now dependent on the chill chain, the integrity of the chill chain, to make sure that the temperature is properly controlled to stop microbe growth right throughout. And then, of course, into the home; we now have created in our homes a focus, the fridge is now a focus, that is very different from the larder we remember, where food was spread out. Secondly, we are not always so good at controlling its temperatures and therefore sometimes the temperature is much higher than it should be, allowing microbial growth. And, finally, we tend to like our food less well cooked, plus the fact that many of our daughters and sons are not quite so well trained as they were at mother's knee 50 years ago, then sometimes the cooking is not adequate. So, Chairman, it really is right across the board. You can target certain very key ones, such as the source of the organism, cross-contamination after cooking, or failing to cook properly and failing to store properly, but to make a hole in this problem that is a result of the whole change that has gone on in our agri-food businesses over the last half century we have to raise the performance throughout the chain, and that is what we are trying to do, and we believe that we have to do that even before the Food Standards Agency is up and running, and the MLC is trying to contribute to that.

761. So you actually cannot answer my question, where you should put the greatest effort, you would say at every part of the chain?

[Chairman *Cont*]

(*Mr Maclean*) We believe that it would be wrong to put it in one place. To give you a living example, when Professor Pennington did his studies on E.coli in Scotland and sought our advice to help with the studies of the butcher's chain, etc., he asked for a professional input, and it was clear to us, from those studies, that it was inadequate to control it only at the level of the butchery industry, because this particular organism poses a completely new threat, in many ways. Because, if we take this VTEC E.coli, I gave you three criteria at the beginning, with the VTEC E.coli you do not really need the second one, it does not need to multiply very much before it will infect somebody. Now that means that we have an organism here now that poses a completely new threat, and whereas our historical fences, our barriers to defend people, may have been adequate they are now not adequate, and therefore you have to put the fences up. And, it is quite interesting, when we went to the States to look at this problem and asked them what they have done wrong, it was that; they said, "We blamed people, not the fact that this organism posed a new and different threat, and we should have simply explored how to put the fences up." So, the truth is, we believe you have to reduce the prevalence of these organisms right throughout the chain, Chairman.

762. But there are problems in putting the fences up. You say, in your evidence: "It is unrealistic to expect to produce sterile carcases even with very careful removal of hides and fleeces", and so on. Do you think there are people who think it is possible to produce sterile carcases and are putting undue pressure on the meat industry to achieve those kinds of standards?

(*Mr Maclean*) I hope not. I hope that when you talk to people in the real world and they actually understand the problem they would join the spirit that I am trying to express, that you need to drop the prevalence everywhere, you need to reduce the amount of exposure of people to these organisms right throughout the chain.

Mr Mitchell

763. But how can you blame the consumer; you seem to be shifting blame on to the consumer by saying that we are not doing as our mothers and grandmothers did—a long time, in my case—and inferring that the preference for fresh food over salted, boiled, frozen, or whatever, is almost wrong? You cannot blame the consumer for this; it seemed to be what you were doing?

(*Mr Maclean*) No, I do not think one would blame the consumer. Essentially, lifestyles have changed, and demand in the consumer side of the market has changed completely. We have, for example, 50 per cent of our ladies working and the time available to actually cook food, to prepare it, is very much shorter, therefore they demand prepared meals. Secondly, you and we, all, as consumers, now demand fresh food, we actually much prefer that to frozen food. Now if you go back, just to take that example, even if the bird, or meat, was contaminated and you froze it, everything ceased, all the bacterial growth ceased; and if you go back to your Mum's day the only time people became ill was when the bird, or whatever it was, was defrosted inadequately, a bit of pink in the middle, and they got poorly. It is not a matter of blaming anybody, it is actually a matter of saying there is a responsibility right across, including consumers, but I mean right across the chain, to drop the prevalence and to drop the exposure of consumers to these organisms.

Ms Keeble

764. I wanted to ask, in your memo., on the first page, in the fourth paragraph, you have included amongst your traditional forms of food preservation, in fact, freezing, and you have listed as one of the new forms of sources of food poisoning the use of ready-cooked meals, which I think are put into microwaves just as often by men as by women. Which actually is the biggest risk in terms of giving people food poisoning, as a food-cooking method, freezing and cooking from frozen, or is it the development of packaged meals?

(*Mr Maclean*) I do not think I would draw a distinction between the two. If you defrost inadequately and if the meat is contaminated before it is frozen, and the bug has had an opportunity to grow, then you are just as exposed as by a malhandling or malpreparation of a ready meal that has actually been contaminated either in the flesh itself or by some addition to it, if the handling in the factory has not been adequate, then you expose people to precisely the same risk.

765. But in this you have put, in the case of the UK: "there is cause for concern...the UK problem is unfortunately typical of that in most developed countries. This is because traditional forms of food preservation, such as freezing, smoking and other methods are less acceptable to consumers, who now seek fresh products free of additives and preservatives. The consumer trend to use processed meats and ready meals provides further potential..." Are you saying, which I assume from this, that the position is made worse because of the changes in use of food, which, from what you are saying here, means a switch from freezing and defrosting and then cooking to using ready-cooked meals, and you think there is a hazard there; and, if so, what should the food manufacturers be doing about it?

(*Mr Maclean*) What we have done, by meeting modern lifestyles and demanding ready meals, we have made the food industry, or the demand has made the food industry take the meat apart, so, for example, they have taken the skin off it and exposed the flesh; skin is kind of resistant to bacterial growth, flesh grows microbes very easily, so we have created a potential exposure at that stage. We have then added things to it and put it into a ready meal and we have introduced extraneous agents, the marinades and cooking methods, all of which, if they are not properly handled, are potential sources of contamination.

766. So because there are more processes in the food chain, that is where the risk comes from?

(*Mr Maclean*) Yes, of course.

[**Ms Keeble** *Cont*]

767. Do you think that the food manufacturers should have any responsibility for dealing with that, for example, in their labelling and cooking instructions, and such like?

(*Mr Maclean*) I think they should have every responsibility for it, as far as the process is concerned; the whole objective, we believe, of any future control of these problems demands an across the chain elevation in education and understanding, so that, ultimately, we arrive in a position where the whole food chain understands how to behave in the face of adverse circumstances. We have got a long way to go to that position, but that is the only way, in our opinion, that you will ultimately build in the safety that you seek and the consumer deserves.

768. So you do not think that the processors have got any extra responsibility for ensuring that the consumer is given information as to how to handle a more complex product; we have to be honest, they are unlikely to teach you in schools how to put things in the microwave and turn the microwave on, that is just one of those things?

(*Mr Maclean*) I have to agree with you that adequate cooking instructions is obviously a very important part of it, yes.

Chairman

769. One other matter, if we move to some of the specifics we want to raise with you. I was interested, in your memo., talking about where responsibility lies in the food chain, the theme we are exploring at present, you seem to be quite critical about intensive animal production methods in your memo. and you seem to be calling, implicitly, at least, for more extensification of animal production. Is that a fair interpretation?

(*Mr Maclean*) No. The questions are leading me to try to explain something. When we try to explain why we are in the present challenges and positions, why food poisoning incidence levels have risen, and maybe I have to do it with an anecdote, let me use, and, please, I am not just pinning this on the poultry industry, but let me just use poultry as an example, and let me walk through it very briefly with you. When your Mum was alive, she used to buy New York dressed chicken, legs on, head on, leave it in the garage hanging up till she cooked it; she would cut its legs and head off, dress it on a Sunday morning and spread faeces all over the place and put it in the oven, and nobody ever got poorly. Now what have we done since then? We have, first of all, industrialised the process, and in industrialising it we imported masses of raw materials from around the world, and therefore we created new sources of organism which we had never met before. Secondly, we put it into broiler farms, or it could be cattle farms, and we spread it all over the place. Thirdly, we then actually slaughter them, and using production slaughter methods, opening the intestines automatically, and obviously there was contamination. But at that moment we froze everything, the bird was frozen, and I repeat what I said before, nobody got poorly. We then decided that we wanted fresh birds, fresh meat rather than frozen, so we suddenly became dependent on a chill chain that was moving it all round the country, and if the temperature was wrong we were in trouble. We then wanted them in pieces, skin does not grow bugs, flesh does, we exposed another risk. And you then go on to one-stop shopping, where it is in the back of the car for a couple of hours.

770. I think, Mr Maclean, if I may, you are going back and answering my first question all over again. I am actually referring you to part of your evidence. You say: "Intensification of animal production, with animals kept in high densities, often with access to their own faeces, ensures that the organisms are spread widely and are mixed constantly with other similar bacteria." I am asking you specifically about the animal husbandry. Are you saying there that extensive animal production would make a contribution to reducing food poisoning incidents?

(*Mr Maclean*) My colleague, Mr Attenborough, will answer.

(*Mr Attenborough*) I can give you an answer there, Mr Chairman. For example, 25 per cent of pig production today is actually outside. There are some that would say, from a point of view of hygiene, that would actually be a better system, but I would also point out that those animals are subject to attack from carnivores, foxes, birds. I would also point out that at the moment something like, there is a recent scientific report which indicates 3 per cent of gull droppings are positive for this VTEC E.coli. Now, of course, if gull droppings are positive for that, one can anticipate that that material could get into feeding systems out in the field. So, I think, from the point of view of, say, pig production, there are arguments for and against.

771. For and against; so this rather hard-hitting statement in the evidence you are actually now resiling from?

(*Mr Maclean*) No. That hard-hitting statement in the evidence, Chairman, is a part of the component of issues that I just tried to describe to you, all of which have made a contribution to the problem.

Chairman: Let us move on to another one of those component parts. Mrs Organ.

Mrs Organ

772. Animal feedstuffs, if we may move on to it. Obviously, you know that in the Food Standards Agency White Paper there is a proposal to implement the recommendation of the Lamming Committee to create an independent Advisory Committee on Animal Feedingstuffs. You have said, in your memorandum, that: "Studies undertaken by MAFF have shown a varying level of contamination of a wide range of feed raw materials with Salmonella." So, talking about your scenario, about the whole chain, even if we go back, we have actually introduced now Salmonella into the feedstuffs to our animals. I wonder if you could give us a little more detail about outlining the problems, and how extensive you think this problem is, and what are your main areas of concern; and, as a result of that, what therefore should be the main area of focus for the new Advisory Committee? If you would like to just give us a picture of just what this problem is?

[Mrs Organ *Cont*]

(*Mr Maclean*) We obviously believe that it is a very good and correct decision, in the White Paper, that such a Committee be formed, and that was a recommendation of the Lamming Committee and I was a member of that Committee. The basis of our concern was that we felt that there was a lot of committees, all doing extremely good jobs, but a little bit disparate from each other in some of their activities and there was a need for more co-ordination; that was Lamming's conclusion, between those committees, and we recommended a certain number of terms of reference for those committees, and I could give you an indication of those. We believe that all technical development in feed raw materials, manufacture and feed treatments should have a remit in the Committee; that it should co-ordinate advice on policy and legislation, including European Directives; that it should review the nutritional characteristics, plus the safety of ingredients, the safety quality and efficacy of feed additives, in that area, and of undesirable substances, and the recycling of own species materials. Those were the proposed criteria that the Lamming Committee actually set out, and we still believe that that is an important role, and therefore welcome the White Paper's proposals to do that. I can report that there is still a source of exotic organisms, of Salmonella, for example, in imported and in some of our own raw materials, but I can report that, since the Protein Processing Order, for example, in 1989, there has been a very significant improvement in our own produced raw materials, and, whereas at that time there was a significant level of infection in imported feed materials, that is now improved significantly. But it would be wrong to lead you to say there is none in there, there are still single figure percentages of Salmonellae being found in animal feed raw materials coming into this country, and very low amounts, around 3 per cent isolation rates, in our own produced materials.

773. So when you are saying it is single figure percentages from imported, and you are saying 3 per cent from our own foodstuffs, when you say single figures, are we talking sort of 9 per cent, 8 per cent, showing Salmonella?

(*Mr Maclean*) If we take home produced animal protein, in 1991, I will give you 1991, 1997, in 1991 it was 3.4 per cent, it is now the same, 3.5 per cent; that is under the Protein Processing Order in this country. In imported animal protein it was 12.2 per cent, the isolation rate, in 1991; it is now 5.1 per cent, so there has been an improvement. And in oil proteins, those are crushed oilseeds, so they are vegetable proteins, that are brought into the country, in 1991 the isolation rate was 23 per cent, and it is now 5.9 per cent. So there are improvements, but we would still have to say to each other there are sources of organisms, obviously, coming into the country from all round the world.

774. Can I move on to the other one, about genetically modified crops already being fed to farm animals. I wonder if you could tell us a little bit more about this. Do you believe that this is going to be a risk to either animals or to human health, and what should be done so that the consumer is aware of the fact that they are buying meat that has been fed genetically modified crops?

(*Mr Attenborough*) Certainly, the truth is, with genetically modified feeds, that we do not know the effects that it may have, if any, I think that is the point, if any. And, certainly, there may well be consumer concerns about the feeding of genetically modified materials to animals; we are probably here talking about soy and we are talking about maize, that comes in from the United States undeclared. Now, clearly, the routine testing, it is possible to test for the presence of the genes by DNA fingerprinting techniques, but that is not done on a routine basis; so it is clear that we can have the possibility of GM materials going into animal feeds. And MLC, obviously, we are led primarily by consumers, and, therefore, from our point of view, we do not recommend the use of GM feeds.

775. Do you have any evidence of what sort of percentage of foodstuffs will be having GMOs?

(*Mr Attenborough*) I do not have that information, no; if I may say, I suspect some of the supply companies may well have.

Mr Mitchell

776. Is it possible to quantify the risk from dirty animals as a proportion of the overall risk?

(*Mr Maclean*) No, it is not, Mr Mitchell, it is just true to say that there is a source of contamination, and if we are taking the approach to reduce the source, the exposure to the consumer at all levels then we believe that it should make its contribution by encouraging farmers to produce cleaner animals, which the Meat Hygiene Service is now trying to do.

777. Do you think the Meat Hygiene Service's Clean Livestock Policy is making a difference here, is it improving the situation?

(*Mr Attenborough*) Yes, Mr Mitchell, I do, actually, I think the effect is biting there. I was involved with a Joint Industry Working Party, which was working with the Meat Hygiene Service, with industry, looking at the introduction of clean livestock. We have got a situation now, with this Policy that has been introduced, resulting in category 1 and category 2 animals being accepted to go forward for subsequent processing, and the levels of rejection outside those categories are quite small, 1 per cent for cattle, 0.7 per cent for sheep, I think that is quite good, and it is certainly known that cleaner livestock, there is scientific data to suggest that cleaner livestock produces a lower carcase microbe count. To give you an example in scientific terms, that is approximately a 1,000-fold difference in microbe per square centimetre. So, yes, it does.

778. But the effort seems to be largely educational and voluntary, road shows, and codes; therefore, it could well be transient, the effect evaporates after a time?

(*Mr Attenborough*) I do not think it is transient. There are certainly road shows and communications that have taken place, I have done some of those road shows. I remember one farmer saying to me, in Cambridgeshire, "What's wrong with a spec of dirt?"; and I answered him, I said, "Well, have you got any children?", and he said, "Yes". I said, "Would you like those children to go on dialysis

[**Mr Mitchell** *Cont*]

machines three times a week for the rest of their lives?"; the answer was "No". I said, "That's why you've got to produce clean livestock."

779. That is true, but rejection is a more effective sanction, I think?

(*Mr Attenborough*) I would suggest, the practices in the abattoir, and the Meat Hygiene Service, who are here today, can comment further, are being rigorously applied, and I think that is very important in doing that, the question you asked me; certainly, clean livestock does result in lower microbe counts per carcase.

780. In the July to November period last year, I see that 2.7 per cent of the cattle presented for slaughter were classified as "dirty"; is that an acceptable proportion, or a high proportion?

(*Mr Attenborough*) I think, if you look at the trends that are taking place, in the MHS published material, you will see that trend is going in a positive direction. What is very important is the fact that the animals that are selected to go down the line must comply with those categories 1 and 2; that is the important issue.

781. I wonder what feedback the transporters and the farmers get to encourage them to comply with all the advice they are given?

(*Mr Attenborough*) I was talking to a farmer last week, from Carlisle, who was left in no uncertain terms what had happened, and he had clearly transgressed, if you like, and he was out of specification. I think there is some feedback coming back down that line, in some measure.

782. But they are not directly penalised, are they, in a sense?

(*Mr Attenborough*) The Joint Industry Working Party working document, the Red Book is the document to talk about, actually has a commercial clause in that and it is a joint statement which recognised that, if animals outside appropriate categories had to be subsequently processed and that there was a cost associated with that, that cost might be transferred back to the supplier.

783. Might be?

(*Mr Attenborough*) Yes. That is the word that is in that final document. I wanted a stronger word than that, Mr Mitchell, but that is the word that was agreed.

784. Yes, I could have seen the advantage of a stronger word. What happens to the animals that are rejected for slaughter?

(*Mr Attenborough*) A number of things can actually happen to them; they can be detained overnight, if they are wet, for example.

785. At Her Majesty's pleasure?

(*Mr Attenborough*) I suppose that is one way of putting it, yes. They can be cleaned up and then re-presented. A second option, for example, that could be taken forward is that they can be kept until the end of the day and the line can be slowed down and special treatments put into place to handle their processing. A number of options can be employed.

786. Which is the most common of those?

(*Mr Attenborough*) If you look at the Meat Hygiene Service material, that actually lays out in some way, the various distributions of the different types, and perhaps they might be the better people to ask this of.

Mrs Organ

787. On the presentation of dirty animals, is there not actually some confusion by farmers and people in the abattoirs about actually what is and what is not acceptable? You might have done the road shows, and you might have a classification 1-5, but there is a grey area at about 3?

(*Mr Maclean*) The truth is that it is a subjective system, it is bound to be, by definition, and, therefore, some critics may well make those sorts of remarks. But the truth is that the Meat Hygiene Service have gone to a lot of trouble to design a pictorial representation of what they expect to be in each of the categories; they have gone round with our own staff, and we have put these posters up in auction markets to get plenty of communication going of what these are. And they have instructed their Official Veterinary Surgeons, very strictly, as far as the detention and rejection of these animals are concerned, but also with a hand of help, of giving understanding down the line, of what constitutes a 3 or a 4, or what have you. And, although people make noises about 3s and 4s, the truth is that the majority of those are detained, the line slowed down, or they are detained until the end of the line, or they are cleaned up, in some cases, at a cost to the abattoir, and some of which may well, in the long term, be charged back to the industry. And the system at the moment, after only four months, appears to be working; that is perhaps the important thing. And the noise coming from the farming industry, which is still a little bit tetchy, here and there, shows that they are reacting and they are actually trying to do something, and the evidence that we have at the moment is it looks promising, I think.

788. I am interested in the figures about 2.7 per cent of the cattle presented for slaughter were classified as "dirty", but you said that if an animal is presented and it is deemed to be a 3 then it might be held until the end of the day and then is put through a line, or it may be that it is put into lairage; this 2.7 per cent, are we talking about ones that are outright rejected, or ones that initially, at the abattoir, they say, "No, this is a 4, this is a dirty animal" but will then leave it? It is interesting to know where this figure is coming from, the 2.7 that are dirty?

(*Mr Maclean*) I think, to be fair, one must ask the Meat Hygiene Service that, but I believe the answer will be that, prior to them inserting the controls and the guidance, they did some work to get a figure of how many were dirty, and I believe that is where the 2.7 per cent came from.

789. But they are outright rejected animals?

(*Mr Maclean*) I cannot answer that question, Mrs Organ, but please ask the Meat Hygiene Service. But since they have instituted the procedures they are recording in detail the holding and rejection rates; and, as my colleague, Mr Attenborough, said, they are cattle 1 per cent and sheep 0.78 per cent, I think,

[**Mrs Organ** *Cont*]
is the animals that are either held, rejected, or whatever. And then they can produce for you a great list of what happens to them, 20 per cent of them I think are rejected outright, they go back to their sources, but then there is a whole series of other actions, and I am sure your question will be satisfactorily answered by the MHS.

Chairman: We will pursue that later. Mr Collins.

Mr Collins

790. As well as the food safety issues which you do address in your evidence to us, there are obviously also the longer-term nutritional and health effects of consumption of red meat. Now we have all seen in our newspapers recently there is a fair degree of debate, shall we say, about the COMA report, and so forth. Could you give us your views on that subject?

(*Mr Maclean*) We think it was a shame, the way the publicity on that issue was handled. We think, regrettably, that the whole point of the very worthwhile evidence that was coming forward, which was to advise people to eat a balanced diet, and if they were not eating enough vegetables to eat more vegetables, was completely missed in the way the thing happened to be handled, and therefore the publication that came out, which suggested that people should reduce their meat consumption. We hope that that is going to be redressed in the future.

791. Would you agree that actually the evidence, the advice that was published last September, was alarmist, this advice to people on even average levels of consumption of red meat that they should cut back?

(*Mr Maclean*) We do not think it was right, and we do not think that the evidence supports that conclusion at all, and we do not think that independent evidence from round the world supports that conclusion. We believe that, yes, we measured it, in consumers, three days and two weeks afterwards, and the message was clear, and therefore it was an unfortunate message, if you measured it, and we then measured it in GPs and we found the same signal; so it was unfortunate.

792. Would you join the calls for the Government to stop dragging its feet and to publish the full COMA report?

(*Mr Maclean*) I do not believe the Government and its committees are dragging their feet, I believe that—and it is only second-hand information—they have the report completed. I do not believe that that report is likely to be very different from the conclusion that the eminent scientists who sat on it drew in the first place, and, therefore, we would look forward to seeing it published in that form.

793. And, finally, what lessons do you draw from the experience of what happened last September, bearing in mind that it was the Health Secretary who leapt in to make this pronouncement in September, what conclusions do you draw from that of the possible future of food safety, one that is going to be managed by the Health Department?

(*Mr Maclean*) I think the reason why the Government found it difficult at that moment was that it was trying to accommodate another body. Prior to the report being due to be published, there was a body called the World Cancer Research Fund, that is, in our opinion, a less than unbiased body, and it had produced a report worldwide that came to some conclusions similar to those which appeared in the press release. And we believe that the Government was genuinely trying to accommodate the two reports in order not to give a confusing signal to consumers and have acrimonious debates between the two. And we think, in trying to accommodate those two things, regrettably, it did not quite come out the right way, and we are looking for that to be changed.

Chairman

794. Let us look a bit more at the World Cancer Research Fund's work, Mr Maclean. I remind you, your remarks are under parliamentary privilege so you can say what you think: "less than unbiased", was your phrase?

(*Mr Maclean*) It is a body that does some quite useful work in this sort of area, but it actually has certainly some quite firm prejudices, and, without me reflecting them, perhaps the spokesman at that time, Professor Hooper, I think it was, who said that meat should be treated as no more than a garnish, could put it into context.

795. But do you think that that announcement last September, as far as I remember it was, actually caused lasting damage to the meat industry? The impression I formed locally was that actually people laughed it off as another silly story?

(*Mr Maclean*) Yes, we hope that is right, Mr Chairman. The market research that we did certainly showed that it had been noted, and, as I indicated, it had been noted in some health professionals. But it was accompanied, in all of this market research now, with a feedback of the consumers being a bit fed up, confused, but a bit fed up with hearing these food scares, one after another, and not showing what they can or cannot eat, that is a more general message that, fortunately, we are getting through.

796. Can I ask why you were so quick to condemn that advice in September with some very effective rebuttal, press releases I saw, and so quick to endorse the ban on beef on the bone?

(*Mr Maclean*) The Meat and Livestock Commission makes its living, if you like, by being a knowledge body, by employing scientists and working with outside, independent scientists on every subject there is across the livestock and meat industry, so we hope we speak with authority. We were aware, because both COMA and the World Cancer Research Fund reports were under construction, we had been aware of that for several years, and, therefore, we also, as you would expect us to, with parallel scientists, who were working in the area, were actually encouraging them to form their views; those scientists, therefore, off their own bat, not with our backing, had a view. And, therefore, when the report appeared it was very clear that some of the quite eminent people did not quite agree with the conclusion that was published, I have to say that, the conclusion that was published, which at the moment is only a press release.

Mr Mitchell

797. Since the incidence was so minute, why not leave it to consumer preference, and indeed trade preference, butcher preference?

(*Mr Maclean*) I did miss the answer to the last question, so can I link that with that, which is beef on the bone, and I would like to say to you that the Meat and Livestock Commission supported that decision by the Minister, and I would like a second to explain to you why, because this is our opinion and not anybody else's. The scientists who were doing the experiments on BSE had set up an experiment which demanded serial slaughter of animals, and some of the slaughterings were animals that were slaughtered at 26 months, 32 months and 38 months after infection with BSE. They found infection at 32 months in these dorsal root ganglia, these little things that come off the spinal column, they found no infection at 26 months, so they did not know whether there was infection at 27, 28, 29, 30 or 31, they just knew they had found it at 32 months. The second point is that we eat beef in this country only from animals under 30 months old. The third point is that the eminent scientist, Professor Anderson, at Oxford, who is doing a lot of the epidemiological work, came to the conclusion that in 1997 there were six animals that could have been in the incubation stage, where those dorsal root ganglia could be infected, and in 1998 three, and in 1999 zero or one, where the dorsal root ganglia could be actually infected. Fourthly, the scientists came to the Meat and Livestock Commission to do their work on the dissection of the spines and to cut the T-bone steaks, to see what this looked like, and I personally went down to look, and I was surprised to see that, of 24 T-bone steaks cut out of one carcase, I was looking at the dorsal root ganglia on my plate in ten of them; that is the fourth point. The fifth point is that we knew, from the scientific experiments that are in hand now, they are testing all tissues, it is going on continuously, that there will be no more results, as far as we are aware, of any major significance for 18 months, by which time the animals incubating in this stage will be either zero or one and pose the nation either nil or very, very low risks. The sixth is that the Chief Medical Officer, well before this time, had said that he did not think that the public should ever be presented with tissues in which this agent had been found, without any remark about risk assessment. Therefore, in our opinion, the Minister made a right decision, because he said, "I wish to create a watershed now, because I have found it in dorsal root ganglia, so I am going to have to ban spinal columns, for the moment", I missed a bit. He had also got a hint of some infection in bone marrow, but that was at 38 months. So he said, "What do I do?", I think, "Do I ban it now, or do I do a trickle ban, the spine now, the long bones later, knowing full well that it is 18 months before anything seriously bad can happen, by which time the risk will be so low it does not matter; or do I create a watershed now, be very clear, and put a ban in at this moment in time, that is clear to the public and everybody else, and buy the industry the time, the time over that period of time?" Now that is the reason, I do not know the Minister's personal logic, why the Meat and Livestock Commission gave him support, and we still do; we believe, under those circumstances, that that, which is not just a scientific decision, it has some judgement about future trends, was a good decision.

798. So you regard this as a temporary ban then?

(*Mr Maclean*) Yes.

799. And you regard a ban as being preferable to a health warning, as on a packet of cigarettes?

(*Mr Maclean*) Yes. We put in to both the Minister and to the Chairman of SEAC an alternative to meeting this requirement, which did appear in the SEAC advice, and I am sure SEAC arrived there themselves, it was not just from us, but it appeared in the SEAC advice. The alternative was to allow animals under 24 months of age to be eaten as normal, because, if you remember the experimental results I gave you, these would be clear of any material containing infection, and to de-bone animals between 24 and 30 months old, and that was in one of the recommendations that, if the Government wanted to go further, SEAC said, you may do one of these two things. Now the Minister had that option and he, in his judgement, and I am sure you have asked him, said, "I wish to make a very clear", this was not a scientific decision, "indication to the public that there is a watershed, that we'll buy the industry the time, give the public a very clear signal", and we respect that.

800. I am sorry to push you on the issue, it is just that we are discussing it this afternoon and, the House of Lords having reacted in this kind of fashion, before it, too, is de-boned, next year, it is kind of topical. I really wanted to ask you about the Hygiene Assessment System scores and the virtues, or problems, of publishing them; do you think it is appropriate to publish them, that information, for the consumer?

(*Mr Attenborough*) Yes. The HAS scores, as you know, are undertaken by the OVS in the abattoir on a monthly basis, and they evaluate practices right across the abattoir, whether it is *ante mortem*, at one end, or it is management practices, at the other end, and the target, of course, is a score of 65 or more, and there is no reason why consumers, I do not think, should not be told about the HAS score on a plant-by-plant basis.

801. Except that only in the case of supermarkets, mobilising this information to demand ever higher standards; the consumer cannot mobilise it or use it?

(*Mr Attenborough*) No, but, obviously, advantages of publication, I think, perhaps do relate to raising the hygiene game, and I think that is a very positive feature that is going forward. And it also emphasises it is important, on a regular and consistent basis, to people within the plant, the plant management as well as the employees. And the point you were actually making is scores may have commercial value, I think, is a factor, and, clearly, those that have got low scores, this may impact in reduced trade; well, so be it. But, clearly, if one plant scores 95 and one scores 85, and the 85 one were commercially disadvantaged, I think they might have a reason to be upset.

(*Mr Maclean*) It is important, Mr Mitchell, if I may chip in, for us always to say that the Hygiene Assessment Scores are not an indicator of the wholesomeness of the meat that is being sold.

[**Mr Mitchell** *Cont*]

802. But they are going to be taken as that?

(*Mr Maclean*) No; the health mark is the thing that tells, under the OVS's control, that says, "This meat, this carcase, is fine to eat." The Hygiene Assessment System is an attempt, at the long term, to improve long term the raising of standards of hygiene throughout the whole chain and is to be welcomed. But, the problem, your point is very right, that it is of greater value for major buyers to decide, to cover their own reputations, which particular plants in the long time they may wish, or not, to buy from. That is the real teeth in it. Because we have the added problem, as we all do, on GMOs or anything else, we face an immense problem between us all of what you put on labels; it is impossible, we all want things on labels and we cannot all have them. And one of our biggest tasks, as an industry as a whole, is to try to get agreement across us what must go on the labels and what is not necessary but should be left to control further up the chain.

Mr Todd

803. Can I quote from the evidence we received from the Association of Meat Inspectors on this subject: "HAS scores in abattoirs can easily be manipulated. It is in the interest of the...OVS to ensure that the HAS score gets to above the required 65 per cent level. Many of the scores have been criticised by the SVS", which is the independent process of auditing these, "as too optimistic—and this (SVS) inspection takes place after a "clean up" for the visit." Would you care to reconsider your answer, based on that; these are the people who actually do the job?

(*Mr Maclean*) No, I do not think so. I am sure the MHS knew this for themselves. They obviously developed the system about 18 months, two years ago, they ran it for a period of time as they tested it without it being used, if you like, as any sort of discipline, and then, I think in February of last year, they did an exercise of tightening it up to make sure there was absolute consistency across their system. That resulted in some changes, which provoked some of the remarks you have just read out, at that stage, but I have no doubt that they feel more comfortable with the system now they have done that test, and it is more consistent. But I do repeat, and they will repeat, there are parts of it that are subjective, there are parts of it that are not; and, therefore, of course, there is human judgement involved in there. And all we can say is, it is early days, to my knowledge they are doing their best, through consultation exercises and comparison exercises, to make sure it is as equally applied as it possibly can be.

804. What is the significance of the score of 65?

(*Mr Maclean*) The significance of the score of 65 is, if you look at the ratings, they have a rating system of the different parts of the plant and the different process control methods they are actually trying to rate, and overall a score above 65 means that the plant's process control is such that it is more likely to continue without supervision to produce wholesome food than one which is under 65.

Chairman

805. I think these questions we will pursue with the Meat Hygiene Service when they come before us.

(*Mr Maclean*) I am sure they can answer it better than I can, Chairman.

Mr Hurst

806. Mr Maclean, you have told us, in your helpful evidence, that following the major E.coli outbreak in Scotland in 1996 you carried out an inspection of, I think it was, 600 retail shops. I would like to know what your findings were, or a summary, I think, of your findings; and I think thereafter you ran seminars, did you not, with butchers, and, it was quite a large number, what their reactions were to the findings that you had made?

(*Mr Attenborough*) Certainly, the Pennington Report, which we are involved in, and the survey that we did, we were encouraged by some good practices, and the converse. For example, in good practices, we noticed that 83 per cent of those that were cooking meat were using probe thermometers, that should be 100 per cent, but nevertheless that was quite a strong feature; so on the positive side there. We also noted, on the other way, that very few, for example, were using probe thermometers in terms of retail and storage. Now the use of probe thermometers that you independently calibrate is a mechanism that you have got a critical control point, and that is a very important feature. Certainly, as regards the seminars that we undertook post Pennington, yes, we conducted 90 seminars, for about 4,500 butchers, I think, attended, and we covered matters such as the Pennington Report, E.coli, we covered matters such as the introduction of Hazard Analysis Critical Control Point techniques, and, of course, we did these seminars together with both REHIS in Scotland and CIEH in England and Wales, together with LACOTS. And so we had quite a lot of pull there with the local environmental health officers. Clearly, I think, the lessons and the areas of concern, that we feel that it is important to introduce this technique of hazard analysis in butcher practice, and we are in advanced discussions with the Department of Health with regard to the installation of what is called an "accelerated" HACCP over approximately a two-year timescale for butchers in England.

807. Did you find very much divergence between the large supermarket butcher and the smaller family butcher in standards of practice?

(*Mr Maclean*) I think that we did not look at that, is the truthful answer; we were asked to look at the independent retail industry and people who cooked in the back of the shop, who were manufacturing. So we were actually surveying those people who were either covered at the bottom of the Meat Products Regulations or were generally covered by the General Food Hygiene Regulations in Scotland, so it was essentially the independent retailer. I think you cannot generalise about this. You can find very small people who are extremely good at what they do and are well trained and do all the right things, and you can find some middle-size people who perhaps can raise their game. I think it is important for me to sort of summarise what we did find. We found that, the

[Mr Hurst *Cont*]

average level of training in those butchers, most of them had some training but it was very basic training, we mean sort of half a day and how to wash hands and how to keep things clean; that was perhaps a crucial point. The second point Mike has talked about, which was that about half[1] did not actually control cooking temperatures using probe thermometers, that although they were doing a good job in most cases there was not a documented risk assessment mechanism, in the vast majority of them, so there was not a planned mechanism in there. And they had quite good controls when they were manufacturing in the back of their shops, but, basically, the controls were not quite so good when it came to the storage. Perhaps, more important, to answer your last point, when the outbreak occurred, the Commission offered free advice to all the butchers in Lanarkshire, on how to improve their performance and protect themselves, and the response to that was about 25 to 30 per cent of the butchers. Now many of the butchers who did not come in, do not misunderstand me, are very good butchers, but that was very formative, an opinion we formed, which said that you have to do things that help the industry raise its own performance, such as the HACCP side of things, but you also have to have it underpinned with very good law and enforcement, you need both working together if this thing is actually to succeed properly. So we welcome an initiative that may be coming from the Department of Health, who have asked us to help train butchers in HACCP, in England, and they are trying to find some way to do that. And they will use that as a carrot and stick because they will essentially say, "The Government is minded to license in a couple of years' time; a criterion of the licence will be that you have HACCP mechanisms installed, but the carrot is we are going to spend some money on helping you to understand this and implement this. So it is a carrot and stick, you have two years, you have to learn." We think that method is a very laudable one and we think we would like to see it encouraged in other sectors.

Chairman

808. Thank you. I think we will probably have to draw this interesting session to a close, Mr Maclean. Thank you for your time and trouble. I understand there is a pack your colleague is trying to show to you that you want us to be aware of; is that the case?

(*Mr Maclean*) Yes, please.

809. What does it contain?

(*Mr Maclean*) It has a follow-up leaflet to try to put into context what we have been saying to you, and it has got some other information on what the Commission does in maintaining the meat-eating habits of this country, which at the moment are recovering fine, thank you.

Chairman: And some recipes, I hope, as well. Thank you very much indeed.

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[1] Later amended by witness to "20 per cent".

Supplementary Memorandum submitted by the Meat and Livestock Commission (C95)

FUTURE FOOD SAFETY ISSUES IN THE RED MEAT INDUSTRY

MLC ROLE

1. Under the Agriculture Act 1967, the then Labour government gave the Meat and Livestock Commission (MLC) an extensive role to improve the efficiency of each section of the livestock and meat industry, from feed and farming to the retail industry and the consumer. As such, MLC acts as a unique source of market, economic, technical and scientific information in the UK, Brussels and throughout the world.

CURRENT STATE OF FOOD SAFETY IN RED MEAT INDUSTRY

2. We believe that the rapid changes in consumer lifestyles and demographics have exposed the consumer to risks that now need new procedures. These changes include the trend to fresh and non-preserved foods and the greater competitiveness of farming and food processing.

3. Methods which kill food-poisoning organisms can make a contribution to mitigating this problem. These include proper cooking, irradiation or other methods of pasteurisation. However, they alone, even with the better use of risk assessment, will not provide a complete solution.

CURRENT APPROACH

4. The ultimate objective must be to build into every aspect of the livestock and meat chain an inherent capability to maintain the hygenic integrity of the food and to add value rather than to detract from it. This can only be achieved with intensive training throughout the industry chain, underpinned by good and well-implemented law in the downstream sectors of the industry, such as that provided by the 1990 Food Safety Act.

5. This need was well illustrated by the work the MLC undertook at the request of the Secretary of State for Scotland during the Pennington enquiry into *E.coli.* The MLC concluded that *E.coli* O157 presented a new challenge due to its unexpected capability to cause infection through very low doses. To achieve effective consumer protection, the level of *E.Coli* across the whole food chain had to be reduced. We also concluded that tackling the problem only at retail level would be insufficient. We therefore recommended action against this organism in each sector of the industry chain.

6. One of our key concerns was that in the period prior to full adoption of the Pennington recommendations, the consumer could remain exposed unless the industry, working in partnership with Government and local authorities, raised its performance immediately.

7. The MLC was therefore a key player in recommending that:

- only clean animals should be accepted for slaughter;
- abattoir practices should be tightened to limit contamination and cross-contamination; and
- butcher training should be implemented immediately, coupled with enchancement of local authority codes of practice to allow a "carrot and stick" approach to improve performance.

8. To date, this has been a particularly successful exercise. However, both the Government and the MLC recognises the need for effective underlying enforcement structures to ensure that the whole industry participates. Our experience is that much of the industry is well aware of the needs outlined above, but that some still have to be persuaded that money spent on improving practice will bring compensating commercial benefit.

9. We strongly support the Meat Hygiene Service activities both in implementing stronger controls on the slaughter of clean animals and in introducing the Hygiene Assessment System (HAS) scoring system. These activities allow the customer to be aware of, and so influence, standards in the abattoir industry. This activity, plus our own work on researching steam pasteurisation to help control the level of organisms at abattoirs, will make a real contribution. It is disappointing that, as yet, the Government is unwilling to help fund this important research which arises directly from the Pennington recommendations.

10. We also strongly welcome the Department of Health's far-sighted initiative in planning to train butchers in England to accelerate the introduction of risk assessment based on HACCP, prior to statutory licensing.

Further Needs

11. However, we are still concerned about some continuing gaps.

1. *Chronic overcapacity in the abattoir industry.* This is a cause of its poor investment and training record and is a major threat. Industries that have poor financial performance are more likely to cut corners and treat training as a low priority. The MLC therefore still believes that rationalisation of this sector is crucial to successful future food safety. MLC has the necessary legislative authority in its 1967 Act, if it were to be agreed that such action was necessary.
2. *The abattoir section should introduce risk control procedures as soon as possible.* The HAS scoring system provides a valuable assessment system for control authorities, but does not itself build improved procedures into the industry. Whilst, as stated before, we welcome the Department of Health initiative to train butchers, we believe that Government should similarly establish a scheme based on HACCP prinicples in abattoirs as soon as possible.
3. *The need for a substantal training programme to achieve a culture change throughout the industry.* If we are to be successful in fully protecting the population against food poisoning organisms, we have to inbuild into every person working in the industry an understanding of:
    - what constitutes the production of a safe animal or product; and
    - what needs to be done under any adverse circumstances to protect the integrity of that product.

    This includes:

    - procedures limiting slaughtering to clean animals;
    - the protection of temperatures in the chill chain, from abattoirs to retail outlets;
    - knowledge of the prevention of cross-contamination in butchers' shops; and
    - an understanding of food handling by the consumer.

12. Further, any future modifications of the Food Safety Act or other developments in law underpinning assurance and control in our industry must make training a key criterion of the permit to produce food.

SUMMARY

13. MLC continues to be concerned about food law enforcement on foreign red meat imports. It is well aware that Ministers are committed to ensuring that any non-UK red meat that enters our markets meet the same safety standards. Ministers are committed to achieving this through their established procedures for controlling imported food. We in the MLC entirely commend their efforts to achieve this.

14. The MLC strongly welcomes the Government's clear commitments to ensure food safety for all meat entering the food chain, whether this be UK or foreign origin. The last few years have brought greater industry and consumer awareness of the increased risk from a more sophisticated delivery system and a more varied diet, both for animals and consumers. This has increased awareness of the need for a radical MLC reassessment of food safety practices throughout the supply chain.

15. Encouragingly, a great deal of improvement is coming from the Government's Food Standards Agency initiative. As we point out above, however, much still needs to be addressed. The MLC is keen to continue to be closely involved with Government in tackling these needs.

9 February 1998

Supplementary Memorandum submitted by the Meat and Livestock Commission (C107)

I refer to your letter of 16 February 1998 to our Director General, Mr Colin Maclean. Please find a supplementary memorandum in connection with the point below.

Q: Your memorandum states that gaps in our knowledge exist concerning the epidemiology, pathogenesis, prevention and control of pathogenic organisms in farm livestock. Are any of these gaps in areas of perceived high priority for research or do they correspond to the areas for future work identified in the "Report of the Review of MAFF funded Bacterial Foodborne Zoonoses and Meat Hygiene Research"?

A: A lot of good research is focused in this area. New projects have produced more knowledge gradually closing the gap. These include research work on the identification of reservoirs on pig farms for *Salmonella typhimurium,* risk factors for *Salmonella typhimurium* DT104 in cattle, and colonisation, persistence and epidemiology of *Escherichia coli* 0157–H7.

The level of Government funded research on *Salmonella* has increased in the period 1996/97—1997/98 by £0·4M.

MLC would, however, support more work focusing on the distribution and incidence of specific foodborne pathogens in the animal and also into research in end process treatments such as steam pasteurisation.

MLC is discussing these matters with relevant people within MAFF.

26 February 1998

Memorandum submitted by the Meat Hygiene Service (C88)

BACKGROUND

The Meat Hygiene Service (MHS) was launched on 1 April 1995 as an Executive Agency of MAFF. It took over responsibility from some 300 local authorities for enforcing meat hygiene, inspection and animal welfare at slaughter legislation in licensed slaughterhouses, cutting plants and cold stores in England, Scotland and Wales.

The MHS was set up as a single agency to achieve:

- high standards of hygiene controls, consistently and uniformly applied across Great Britain;
- more cost-effective and flexible deployment of staff; and
- a greater degree of openness and consistency in charges to meat producers.

The advantages of a single service were soon realised as changes in legislation affecting the meat industry were announced as a result of the BSE crisis.

The majority of MHS staff are based at licensed premises managed from six Regional offices at York, Wolverhampton, Cambridge, Taunton, Cardiff and Edinburgh and a Headquarters in York.

STAFF NUMBERS

At the outset the MHS had about 980 staff. In addition, the Agency made use of contract Official Veterinary Surgeons (OVSs), involving some 970 OVSs (equivalent to about 130 staff years).

The MHS currently employs about 1,700 staff. Over 450 additional staff (on a full time equivalent basis) have been recruited and trained by the MHS since March 1996 to ensure full compliance with the enhanced BSE/SRM controls.

Following a recent retendering exercise, the MHS now makes use of 510 contract OVS (equivalent to 131 staff years).

HARMONISATION

At launch MHS transferred in excess 700 meat inspection and veterinary personnel from 176 different local authorities on their existing terms and conditions. During its first year, MHS worked, in consultation with UNISON on the one off harmonisation of MHS transferees' terms and conditions to achieve a consistent remuneration structure.

ROLE OF MHS INSPECTION STAFF

Meat Hygiene Inspectors (MHIs) work under the responsibility of Official Veterinary Surgeons (OVSs) in meat hygiene and inspection teams in licensed plants. These teams are responsible for ensuring that meat produced for sale for human consumption is processed hygienically. OVSs are the team leaders within a licensed plant and, as such, take full responsibility for hygiene, inspection and animal welfare supervision. Their role is to ensure that the work of the MHS team is carried out effectively and efficiently.

The role of an MHI is to carry out post mortem inspections of carcases, health marking and where necessary, assist the OVS in ante-mortem inspections. Under the direction of the OVS they will also ensure that the necessary standards of hygiene are observed throughout the production process.

HYGIENE STANDARDS

Since its launch, the MHS has been set rigorous performance targets to raise hygiene standards in licensed premises. The MHS has successfully met all targets to date. The Agency is not complacent and is clearly focused on the need to build on progress already made and to achieve significant further improvements. To this end, a detailed strategy has been developed, not only to ensure that its formal targets for 1997–98 are met, but also to meet the overall objective of raising hygiene standards across Great Britain.

Management systems and monitoring are being enhanced. As part of their contractual obligations, OVSs are required to provide detailed monthly reports on standards at the plant they supervise and the action being taken to deal with any problems that may have occurred. The intention is to work closely with plant management, but where no improvements are achieved by co-operation, MHS staff will progress to taking more formal action and the serving of notices.

Supported by their Senior Meat Hygiene Inspector they are also holding regular meetings with plant operators to discuss in detail the operation at the plant and draw up an agreed timetabled plan for improvement action where necessary. Action plans are reviewed and updated monthly.

The role of the Principal OVS has been developed from a predominantly plant-based role to one as circuit supervisor focusing on the management of contract OVSs and action being taken to improve hygiene standards in all plants.

CARCASE INSPECTION

Carcase inspection is a crucial hygiene control point. Carcases presented with evidence of visible contamination must not be health marked for sale for human consumption. Senior MHIs are paying greater attention to hygienic dressing practices to ensure no contaminated carcases are presented for inspection. MHIs have been instructed not to apply the health mark to any carcase with evidence of visible contamination.

Increased monitoring has also been introduced. Additional resources are being put into the re-inspection of carcases at despatch from abattoirs and reception at cutting premises and wholesale markets. The origin of any contaminated meat is traced and action taken to correct any deficiencies. Quality compliance auditors also carry out quality compliance audits.

Additional support action is provided through increased OVS and MHI resources in plants with low hygiene standards and through extra post inspection checks on contamination.

A comprehensive system of internal auditing is being developed and the service is working towards accreditation under ISO 9002. Existing staff have been trained in auditing supplemented by a small number of Quality Compliance Auditors who have been recruited.

BSE/SRM CONTROLS

The MHS is responsible, inter alia, for enforcing Specified Risk Material (SRM) and associated controls. The Agency enforces these controls comprehensively and rigorously. The MHS is audited by the State Veterinary Service and there have been no findings of spinal cord in carcases since March 1996. The MHS has developed detailed new protocols for the application of the controls; continued to promote best practice; introduced enhanced procedures to monitor the removal of SRM, established comprehensive auditing and provided substantial refresher training on SRM controls for all operational staff.

ANIMAL WELFARE

In 1995–96 the MHS completed a GB-wide "Animal Welfare audit" reinforcing the importance of animal welfare practices at all licensed slaughterhouses. The MHS has carried out a second national survey in 1997–98 to continue its promotion of high standards of animal welfare.

TRAINING

MHS specialised training

The MHS has invested significantly in training of all its staff to ensure consistency of quality and service. In addition to the induction training provided at launch, substantial on-going training has been provided to all POVSs, OVSs and MHIs to ensure that they are up to date with all current operational issues, including BSE/SRM controls, hygiene and animal welfare and health and safety. The training is delivered through specific training courses and specialised training manuals. It is reinforced through a series of MHS training videos circulated to all staff.

Training of OVSs

OVSs are qualified veterinary surgeons. The veterinary undergraduate course is approximately five years and is extensive and intensive. It incorporates inter alia training in microbiology, pathology, veterinary public health and zoonotic disease.

In addition, and before commencing as OVSs, veterinary surgeons are required to undertake the OVS accreditation course (duration: six days theory plus practical experience). This provides refresher training in meat hygiene and inspection, animal welfare and the relevant legislation.

Enforcement Training

The MHS has delivered a series of training courses on "Enforcement of Food Hygiene Law" for certain operational staff including all POVSs and OVSs. The two day training courses focus on the principles of food hygiene law and on the writing of enforcement notices.

The courses have been delivered by external experts in the field of enforcement and has enhanced the existing skills and knowledge of MHS staff to enable them to undertake supervision and enforcement duties with increased effectiveness.

Continuing Professional Development (CPD)

CPD is a requirement for all MHS veterinary staff to ensure that their skills and knowledge are up to date. In partnership with the State Veterinary Service and other training providers, the MHS provides at least two days training per year to facilitate CPD. POVSs and OVSs must undertake a minimum of a further three days CPD obtained from other sources, such as the Veterinary Public Health Association/British Veterinary Association Conferences and other commercially provided CPD.

Management Skills

OVSs are the team leaders of the MHS meat hygiene and inspection team in their respective plants. Training in assertiveness and general management of their plant inspection team was included in a specific training course delivered in February and March 1997 prior to the start of new OVS contracts. Audio training tapes have also been provided to OVSs to assist them in their role as team leaders. On-going training in assertiveness and other management skills continues to be part of the MHS programme for training and developing its staff.

February 1998

Examination of Witnesses

MR JOHNSTON MCNEILL, Chief Executive, MR PETER SOUL, Director of Operations, Meat Hygiene Service, examined.

Chairman

810. Mr McNeill, I wonder if I can begin by just asking you to introduce yourself and your colleague?

(*Mr McNeill*) Certainly, yes. I am Johnston McNeill, I am Chief Executive of the Meat Hygiene Service, which is an Executive Agency of the Ministry of Agriculture, Fisheries and Food. And to my left I have Mr Peter Soul, who is the Director of Operations for the Meat Hygiene Service and a member of the Royal College of Veterinary Surgeons.

811. Thank you for coming before us, and thank you for your written evidence, and thank you also for the time you gave this Committee last year, in York, when we visited your headquarters, so we are very grateful to you for that, very grateful indeed. Perhaps you could just begin by explaining how you feel the routine hygiene work that you do, I am not referring to the Specified Risk Material work, that routine work you do, actually contributes to food safety? Because this Government, and indeed its predecessor, spoke very highly of your work in driving up meat hygiene standards, and yet food poisoning outbreaks continue to rise, apparently relentlessly, most of them associated with meat and meat products. So what is the correlation between these two factors?

(*Mr McNeill*) The Meat Hygiene Service employs some 1,700 meat inspection staff, on contract, with some 500 Official Veterinary Surgeons, throughout England, Scotland and Wales, to monitor and enforce hygiene standards and controls in some 2,000 licensed premises. Since the launch of the Meat Hygiene Service we have seen an improvement in the standard of hygiene, as identified by the Hygiene Assessment System scores, and those are now published regularly in the Hygiene Bulletin. We believe we have also seen a greater consistency, in that we have invested heavily in the training of our staff and our veterinary officials. We also think that the introduction of the MHS Operations Manual into each and every premises has ensured that all of our staff within the premises, and indeed the plant operator's staff, are aware of the Regulations and the standards that are required within premises, and those Operations Manuals are available within the plants for plant management and Meat Hygiene Service staff to look at and to take a view as to what is happening in the premises to comply with Regulations. Also, we have introduced a number of other initiatives, which we believe are ensuring the highest standards of food safety; those are the MHS Clean Livestock Strategy, which you have discussed earlier today, and, of course, the strict prohibition on health marking of carcases which have evidence of faecal contamination, which is one of the performance targets set for the MHS in 1997/98.

812. We shall come on to some of these issues. This is a very helpful technical answer you are giving us and we want to explore some of these issues in detail, we are aware of them, but the question I am asking you though really is, if you are doing all this good work why is it not being reflected in falling food poisoning incidence, why is it continuing to climb? Is someone else to blame, elsewhere in the chain: "Not me Guv"?

(*Mr McNeill*) I think the difficulty we have is identifying the correlation between the statistics you mentioned and our operations within licensed premises. Our analysis of the figures does not give us a clear indication as to the percentage of those cases that are directly related to fresh meat and meat products, and that gives us some difficulty. I can assure you, where incidents do arise, and where we are aware of them, we of course investigate down the chain to identify is there any weakness in the controls in place in slaughterhouses or cutting premises.

813. But it would be your view that the carcases leaving British abattoirs are now cleaner of microbiological hazard than they were before your work began?

(*Mr McNeill*) Yes. As I was trying to identify earlier, I believe the initiatives that we have put in place and the training and the investment we have put in place, ensuring our staff are of a high standard, high quality, the case is now that the carcases leaving premises are, we believe, of the highest standard.

Chairman: That leads us straight to the difficult question. Mr Todd.

Mr Todd

814. Richard North, who has some experience in environmental health matters, recently found a platform on Channel 4 to put forward his views, in which he claimed that your own inspectors might actually be responsible for spreading microbiological contamination within slaughterhouses. Do you think that would be true?

[**Mr Todd** *Cont*]

(*Mr McNeill*) Before I ask Mr Soul, who is better equipped to answer the technical aspects of that question, before I pass that to him, I would like to say that, of course, there may be an argument in support of Dr North's view, but, of course, you must bear in mind that our inspectors are also fulfilling a very important role of rejecting carcases which have serious faecal contamination, putting in place rigorous enforcement action where carcases are presented in such a position, so they have a role before they actually come to the stage of actually starting to use their knives on the carcases. But I will pass to Peter Soul, who is better equipped to deal with that particular issue.

(*Mr Soul*) I think really the most important point to start off with is to understand how important the meat inspection system is, really, for the purposes of world trade, it underpins international trade in meat; without that sort of equivalent system of meat inspection in trading countries, trade in meat would not continue. Now nobody is going to suggest for a moment that the meat inspection system that exists now is perfect, it is based on a very ancient system which has changed very little over the years, and a lot of work has been done by Member States and other countries around the world on how to improve and modernise it. But you have got to carry the world with you, if you like; before you can make any significant changes in it, everybody who wants to trade has got to agree on what the changes should be. So there may be theoretical problems actually caused by the meat inspection system itself. But we have to have that meat inspection system, and therefore we have got to do whatever we can to make sure that any of those theoretical problems caused by the meat inspection system itself are minimised; and we have got very strict, clear instructions for our staff on how they should operate from the point of view of their own personal hygiene to minimise any risks that are inherent in the system itself.

815. You say theoretical; is there evidence of practical problems?

(*Mr Soul*) I am not sure that I can recall any piece of work which has looked at the contamination that is caused during the normal meat inspection procedure. I may be wrong.

816. Logic surely says, I think you are rather conceding this, that one person moving from carcase to carcase and touching them at various points in the process is as likely as not to spread some contamination, if there is contamination at all, and that in a large plant they will spread it much more widely than in a smaller plant; logic says that?

(*Mr Soul*) Yes; by virtue of the whole dressing procedure, there are risks of cross-contamination from one carcase to another, at very many stages, and just one of the stages of the procedure is the inspection process. What we have got to try to make sure we do is minimise the risks of cross-contamination at all stages of the process, including the meat inspection stage.

817. One of the arguments also presented by Richard North is that the move towards greater scale in the slaughtering process increases risk; essentially, by increasing the size of the operation, the number of carcases going through a particular point, it is likely that any contamination that does exist will be spread much more widely than would be the case in a smaller, localised operation. And, backing up to that, I think he also expounds the view that travel to plants which are not any longer local, large plants which process large numbers of carcases, produces greater risk as well. Would you subscribe to those views?

(*Mr Soul*) There are two points, are there not; can I take the second one first. I do not think that the distance that animals travel to slaughterhouses depends on the availability of slaughterhouses in this country, we still have a very wide spread of slaughterhouses located throughout GB. The distance animals travel is a function of the marketing arrangements, and for many, many years animals have travelled enormous distances to slaughterhouses, it does not depend how close to the point of production the local slaughterhouse is. So I think that is a bit of a fallacious argument in there. The other point about the actual size of the slaughterhouse could be important, but in reality the important point is how well the job is done in the slaughterhouse, and that is measured by the HAS system. You might have a very tiny slaughterhouse, with one man killing one beast very, very slowly indeed and doing an appallingly bad job; you may have another slaughterhouse, killing hundreds of animals an hour, very, very quickly indeed, and doing a superb job.

818. Can I just test whether your HAS system includes an element of risk related to scale, and the possibility of cross-contamination through the scale of that operation; because, as I said, I think you conceded the logical argument there, does the HAS system effectively penalise larger plants on that basis because they would appear to imply greater risk?

(*Mr Soul*) No. It takes it from first principles, if you like; you know, the example I gave.

819. So it omits that element?

(*Mr Soul*) It looks at cross-contamination, *per se*.

820. Because the HAS system is driving many of the smaller operations out of business, because they simply are not able to compete on some of the measures that your inspectors are introducing, and moving towards the larger-scale operations which may indeed contain greater risk to our food chain?

(*Mr Soul*) I am afraid, that just is not the case. Some of the highest scoring slaughterhouses on the HAS are the very teeny-weeny ones.

Chairman: Before we get too far into HAS, actually, we just want to pursue this Dispatches issue, if we may. I think Mr Collins has a point about that.

Mr Collins

821. Gentlemen, you seemed to slightly shift your ground during the course of the responses to what Mr Todd was saying, because we started off with the proposition that the primary purpose of the Meat Hygiene Service and its regime was food safety for the UK consumer, and then we moved on to saying, "Well, it's necessary for World Trade Organisation purposes." Which is, in your view, the primary purpose of the regime which you are responsible for implementing?

[**Mr Collins** *Cont*]

(*Mr McNeill*) Our primary purpose is to protect public health and to ensure that the Regulations are fully enforced within premises, within licensed premises. To do that, we follow protocols and regulations which are required, as Peter has said, for world trade and are the standard throughout Europe. The position is that we make sure our staff are fully trained in the proper use of knives, sterilising knives, chain mail gloves, etc., so that when they deal with carcase after carcase for inspection purposes we do all possible to minimise the risk of cross-contamination.

822. And, given that the evidence you presented to us shows that there has been a huge increase in the resources being put into the Meat Hygiene system, at precisely the time, as the Chairman has said, when there has been a continuing increase in food safety problems, can we take it that if we were to set a fairly reasonable time frame, of, let us say, the next four years, if after four years food safety problems were still increasing at that time, would you be prepared to say at that time there is something wrong with the way the Meat Hygiene Service is operating?

(*Mr McNeill*) Of course, the Meat Hygiene Service is only responsible for one part of the food chain; what happens to the meat after it has left a slaughterhouse and gone to the retail sector, or catering butchers, or indeed after it has left a licensed cutting premises, there is also the possibility of contamination and problems arising then. But, certainly, from our point of view, year on year, we have increased requirements, targets placed upon the agency, to improve hygiene standards in licensed premises, and we anticipate next year will be the same. Targets will be ratcheted up yet again; so within four years' time we would be certainly anticipating a very high standard of hygiene within premises throughout the country.

823. Fine, gentlemen. If you will forgive me, this conversation is getting a little bit like conversations in the Pentagon, at the time of the Vietnam war, when people were told they were winning because the body count was going up all the time. Surely what the taxpayer wants to know is that the output that they are seeking is increased food safety relating to meat and meat products? And if you are saying to me that, however much money we put into it, and we are putting substantially more resources, as taxpayers, into the Meat Hygiene Service, all you can tell us is, in three or four years' time you will be performing better on your internal assessments and scores, but you cannot say that the actual food safety for the public will be any better, is not that a rather unsatisfactory position?

(*Mr McNeill*) I think, as we identified at the earlier stage in the discussion, it is difficult for us to identify a clear correlation between the incidence of, as you say, food poisoning cases, etc., and our work within slaughterhouses, we do not have a direct correlation. Obviously, as I have said, if we had concerns that meat was being produced in a licensed premises for which we were responsible which was in any way connected with any incident of food poisoning, we would investigate that thoroughly, and obviously review it, and indeed I am sure the State Veterinary Service, who audit the Meat Hygiene Service, would review standards within those premises. We have difficulty answering your question, in that if we could clearly correlate the two, or tie up the two pieces of information, then certainly, yes, I think the public would wish to know if the incidence of food poisoning cases were increasing and yet the Meat Hygiene Service were continuing to invest heavily in ensuring that Regulations were complied with, if those two were not working together we would have to look at it, and the public would have a right to be concerned. But we are not convinced and we are not clear yet as to the correlation between those figures.

Chairman

824. It is not your objective, is it, to produce sterile carcases, you accept what the MLC said that that is actually an impossible challenge?

(*Mr McNeill*) In theory, yes, you could argue it is an impossible challenge, but certainly we strive to ensure that the carcases are produced to the highest possible standards.

825. You are seeking to minimise the level of infection on carcases?

(*Mr McNeill*) Yes, Chairman.

826. So have you done a recent survey, has there been any recent survey of the microbiological quality of carcases, which shows exactly what is happening to the output from British abattoirs? If there has, that is tremendous; if there has not, how do we actually know, however splendid all your procedures are, and I think they are very good, by and large, they are actually delivering an improved microbiological quality on the carcases leaving abattoirs?

(*Mr Soul*) There was a piece of work recently, reported in the Veterinary Record, which looked at a correlation, or possible correlation, between microbiological burden on the meat itself and the HAS score at the premises, and it found that there was a good correlation between an improving HAS score and the overall bacterial burden on the meat.

827. That is an interesting piece of research. I would actually quite like to see that. Is it possible you could draw our attention to the reference for that so that we could actually see the detail of that work?

(*Mr Soul*) Yes, of course.

Ms Keeble

828. You have spoken quite a bit now about the HAS system but you have not actually set out how it operates in your memo. I wonder if you could just do that, how often the plants are visited, and could you deal in particular with how you ensure the same standards of assessment and inspection are applied throughout the country; there were some criticisms from the Meat and Livestock Commission about the problem of subjectivity of the tests that were applied, and how specifically do you deal with that?

(*Mr McNeill*) Yes; it sometimes skips the public's notice but we have a presence within licensed slaughterhouses at all times that they operate, we have Official Veterinary Surgeons and meat inspection staff within those premises. The HAS score, the Hygiene Assessment System score, is assessed by the Official Veterinary Surgeon within those premises, in full throughput premises, on a

[**Ms Keeble** *Cont*]
monthly basis, and in low-throughput premises with a HAS score above 65 on a quarterly basis. The requirement is that the vet then submits that score to regional offices and the scores are assessed and checked and then they are now published monthly from January[2].

829. Are the names published, because previously the scores were published but the names were not?
(*Mr McNeill*) That is correct, yes, the scores are now published; the plants are named, the location is named, and the scores are published. Previously, tables were produced showing bandings and where the various plants and the various sectors failed. To ensure consistency of the scores, there are a number of mechanisms. First of all, we invested heavily at the start of 1997 in training of our Official Veterinary Surgeons, to ensure that when they were undertaking HAS scores they took them in as consistent a manner as possible; obviously, we are dealing with professional people here and professional judgements and so variations and interpretations can vary. The training worked well for us and we saw a change in some of the scorings, as vets, following the training, reviewed the scores that they had been giving certain premises; in some cases they went down, in some cases they increased slightly. So that has assisted greatly in ensuring consistency. In addition to that, we are audited by the State Veterinary Service, who make visits to premises, and the veterinary surgeons of the State Veterinary Service undertake HAS scores, and that gives us a check and balance against vets in premises being either optimistic or pessimistic as to the actual hygiene standards within the premises and assessing the score incorrectly. That score is then discussed with the plant OVS and any areas where there is disagreement are discussed and identified and an agreement reached as to what is the appropriate HAS score for the premises.

830. Would you accept the criticism that came from the Meat and Livestock Commission that there is still a problem of the subjectivism of some of the judgements?
(*Mr McNeill*) I am not sure that that is the case. I think, on occasions, plant operators have concerns about their HAS score, particularly if they have dropped in a certain month. But we published recently circa 1,750 HAS scores, we named the plants, we named the location, we named the HAS scores, we gave every plant operator the opportunity of having that score reviewed by an independent principal OVS, one that did not work in the premises; there were only eight applications to do that, and of those eight only six took up the offer. So the industry does not seem to have the concern about consistency.

831. To come at it in a different way, I could imagine that if you had an OVS, who, after all, is sort of attached to your plant and works there alongside the people who are doing the work, there is not actually much incentive for an abattoir owner to have somebody else cross-check the results, because is not the resident one more likely to be sympathetic; or do you not think that is a problem?
(*Mr McNeill*) I have had views from plant operators that think they have an OVS that has taken a very hard line; and, likewise, we have identified plants, following State Veterinary Service visits, where we feel perhaps the OVS is being slightly generous with HAS scores. So it is not the case that they are always working with plant management or trying to give the wrong impression as to the actual standards.

832. And what do you say then to the publicity that there was recently, about the bullying of the OVSs?
(*Mr McNeill*) There have been a number of accusations arising from, in the main, the Association of Meat Inspectors, though some have come from our own staff, concerning intimidation of both OVSs and meat inspection staff. We have addressed that by putting in place a help line, which goes directly through to our personnel department, and support is offered. There has been a relatively low level of take-up of that, with a small number of calls, which we have addressed, of course, the issues that have arisen.

833. Is there any particular part of the country?
(*Mr McNeill*) No, there is no particular part of the country identified with the problem, we have a small number of calls from various parts of the country. In addition, in liaison with our trade union, UNISON, we are just in the process of completing a questionnaire which we have sent to all staff, and it is returned, there is no name given, it is anonymous, and from that we are able to gather data as to intimidation, the level of intimidation, what type of intimidation has taken place, and we are shortly to be able to produce a table clearly indicating what has been the incidence of intimidation over this last number of years.

834. So the figures will be available soon, will they?
(*Mr McNeill*) Yes, that table will be available. Of course, intimidation ranges from verbal abuse through to threatening behaviour.

835. And could you say what are the most common areas of failure, where plants fall below the HAS score of 65?
(*Mr McNeill*) It is difficult for us to give you a listing, a comprehensive listing. First of all we had the large plants, usually tied up with retailers, large contracts, and they are seeking HAS scores well in excess of 65, they have HACCP systems in place, they have extensive training programmes in place for their staff, they are investing heavily to ensure their equipment and their methods of operation are of the highest standard, they are regularly monitored, not just by the Meat Hygiene Service but by retailers sending teams in to check that things are as they should be. So at that end we do not have a particular difficulty with HAS scores below 65. The plants where we have a particular problem with HAS scores below 65, and significantly below 65, are plant operators who are more interested in turnover rather than quality and standards, who do not have a particular interest in ensuring the highest standards of hygiene prevail, and there our staff are very much on the enforcement footing, taking appropriate action as and when required.

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[2] *Note by witness:* On the basis of a 3 month rolling average.

[**Ms Keeble** *Cont*]

836. And is there a particular area of the abattoir's work which will usually tend to be the one that leads to the low score; is there any particular area of the process?

(*Mr McNeill*) I will ask Mr Soul to comment on that.

(*Mr Soul*) It varies so much, you cannot draw any clear output from the figures, I am afraid, because you will get some plants, for example, which are quite old and that have not modernised for some time, and they will consistently fail on the structural aspects, although those, of course, are lightly weighted, so they do not have such a big impact on the overall score as the plants who are poor on their dressing techniques, lack of training for the staff, those sorts of problems, where, because those areas are very heavily weighted, they will tend to drag the score down quite significantly.

837. I can understand that in some areas it is going to cost more to achieve a high figure, for example, if you have got old plant and you have got to upgrade it, and also if you follow what the Meat and Livestock Commission said and you cut out the infected meat rather than wash it down. But, other than that, are there substantial cost implications in more hygienic methods of handling meat, that is, when it comes to things like training and procedures, is there a cost element, or is it entirely down to people sort of applying proper working practices, which should not cost more?

(*Mr Soul*) It depends, I think, on how you look at it. From a sort of simplistic point of view, you could say, yes, it is going to cost me more to train my staff to do the job properly, but if you take a wider perspective and you recognise that because you are doing that you are having less meat rejected and you are providing a better quality product and you may be able to market your meat better, overall it may not increase your costs at all. I think what you will find is that it is very much the managements at the plants and the approach they take to trying to achieve high standards that determine how high their score is.

838. One final question is, do you want to improve the acceptable HAS score upwards from 65, and, if so, what do you want to improve it to?

(*Mr McNeill*) That will be a decision that Ministers will take in setting targets for the agency this year.

839. I am sure they will take your advice though, they will ask you for it; or they might not take it but they will ask you for it: what will you say, what will you tell them?

(*Mr McNeill*) Given that we are now at 90 per cent of premises have to have a HAS score above 65, it would seem reasonable that the HAS score of 65 will have to move up, since it is difficult to move the percentage. I am afraid, I honestly do not have a view on that at this time. It is a matter that the Meat Hygiene Division, who are the policy advisers, will advise Ministers on. After all, the targets are being set for the Meat Hygiene Service; we are informed of them as opposed to consulted.

840. And when are they being reviewed?

(*Mr McNeill*) Annually; the targets are published each year in the Annual Report.

Chairman

841. Are you personally comfortable with 65; it is a good score, a really good score?

(*Mr McNeill*) I think, given where we have come from, when we launched the agency, when circa 40 per cent of premises had a HAS score of above 65, and now we are at 90 per cent, I think that is quite an achievement, but there is still work to do.

Mr Todd

842. Do you think that the published HAS scores are a useful indicator to a consumer, or indeed a supermarket purchaser, in their decision-making?

(*Mr McNeill*) Yes. Most retailers have been aware of the HAS score of the premises with which they are doing business. Most have been, for some time, for some years now, aware of the existence of HAS scores and have asked for them, and used that along with their own assessments to make decisions as to whether or not they wish to do business with those companies.

843. So they understand the meaning of how a HAS score is arrived at, and you feel they can make an informed decision, knowing that particular score?

(*Mr McNeill*) Yes.

844. And you would apply that to consumers as well, should that information be more publicly available, as it is now?

(*Mr McNeill*) Yes, indeed. It has now been published, and the basis on which scores are assessed is in the public domain. So, yes, consumer organisations, I think, will take more interest in HAS scores now they probably understand them.

845. And you think they can safely make choices based on that?

(*Mr McNeill*) I think it is a mechanism, one of the tools with which they can reach decisions as to production in those premises.

Mrs Organ

846. Can I move on to the Clean Livestock Policy. Obviously, you know the figures, that, July to November 1997, 2.7 per cent of cattle presented for slaughter were classified as dirty. Just three little bits, to begin with. First of all, do you think that situation is acceptable? Is it improving, and what sort of level do you think it can get to? And could you give me similar percentages for sheep, that were classified as dirty?

(*Mr McNeill*) Yes, Chairman. I am working off the Meat Hygiene Enforcement Report for January 1998, I am not sure if the Committee members have had a copy of this, if not I am certainly happy to arrange for that to happen. The latest indications are that, for cattle, dirty livestock, 6,674 cattle presented, which were in categories 3-5 when presented, which is 1.07 per cent of those cattle presented; and, for sheep, 43,781 sheep were in categories 3-5, which is 0.78 per cent of those sheep presented.

847. So it is already improving on the 1997 figures that I have got?

[Mrs Organ *Cont*]

(*Mr McNeill*) Yes. We think the Meat Hygiene Service Clean Livestock Strategy has been very successful and we have worked very hard to get the message out, I know that is something the Committee were interested in earlier, in discussions with MLC. We have everything from comprehensive posters, which are now in livestock markets, in hauliers' offices, in the offices of the plants themselves, through to booklets and leaflets, of which I am happy to supply copies, "Clean Livestock: Everyone's Responsibility". So we have worked very hard. And, of course, you heard earlier of the meetings we have held, the numerous road shows, and, of course, we have had extensive training with our own staff, making clear to Official Veterinary Surgeons and meat inspection staff on premises that dirty livestock are not acceptable if they fall into the latter categories of the Clean Livestock Policy.

848. It is quite easy, is it not, to tell if an animal is acceptable on levels 1 and 2, and 4 and 5 is quite easy; the confusion is about level 3, is it not? What evidence have you got that your people and the abattoirs have a confusion about level 3, that they are not absolutely clear whether it could go through normally or whether it could be held over? It is the borderline cases always, is it not?

(*Mr Soul*) Yes, and we do get some reports to us that a particular vet is taking a particularly harsh line, although we do not seem to have any cases reported to us about the other way round. Under those circumstances, we, of course, look into it and try to make sure that we are being consistent. But we do have a full support structure, if you like, there, so that we are able to go and assist the plant-based staff in the assessments that they are making. But, again, we have to accept that it is a subjective system, the illustrated guides are there to help people, but, ultimately, the professional has to make a judgement.

849. Obviously, we are making improvements all the time, as the figures show, but what sort of feedback do farmers and hauliers get, to enable them to seek improvements, because ideally we would want all cattle to be presented clean, in an ideal world?

(*Mr McNeill*) We work very closely with the National Farmers' Union and the Farmers' Union of Wales, and others, to ensure that all farmers producing livestock have received the literature, and I know that the Clean Livestock Strategy has been discussed at their regional and local meetings, and they have been very supportive, and, as part of the Government Industry Working Group, have been very supportive of the Strategy in making sure that it is effective. I am aware that the livestock markets, and I met with them recently, are on board, and they are making sure that, again, the literature is available, they are informing farmers who present dirty livestock for auction, going on to slaughter, that certain livestock is not acceptable, and basically saying that it is not worth putting it into the ring because it will not sell. And I have had very good feedback from them, they are very supportive, and the message has got through. So the farmers are aware, the hauliers also, the haulier associations have been involved in the discussions and have also signed up and are working with us to ensure that they make sure that animals are transported in ways which mean that they arrive in a condition that they are fit for slaughter. I think, overall, we have worked very hard and spent a lot of time and effort, along with other sections of MAFF, and indeed the MLC, to make sure that all those involved in the chain are fully aware of their responsibilities; as identified in the leaflet, "MHS Clean Livestock: Everyone's Responsibility".

850. I said, in an ideal world we would want all animals presented clean, but nature is not ideal and farmers that have got cattle or sheep in hilly areas, through the winter, it is very difficult for them to be able to present animals either for auction or for slaughter that are absolutely dry and clean, and that, in the end, there is going to be a threshold at which we cannot get any further. Is that accepted, that there will always be dirty animals presented, because it is impossible for farmers to actually wash and blow-dry sheep and then put them into some kind of mini-bus where they are blow-dried and not given any stress, so that they arrive in this perfect, permed condition?

(*Mr McNeill*) I think that is somewhat of an extreme view. Our concern is, of course, that there will be slippage in the Policy, that while it is at the top of the agenda at the moment in people's minds that is fine, but once, of course, the public eye moves in other areas perhaps a slippage might start. It is our job, next year, and it will I have no doubt form part of the targets for the agency, to ensure that this Policy continues to be applied rigorously. There is little doubt in my mind that our job is to make sure that our staff are still fully motivated and aware that this is essential that they make sure that animals are in a condition that they can be hygienically processed through the premises. So, basically, we are concerned that there will be some slippage; we are determined to make sure that our staff remain vigilant and ensure that the highest standards prevail. The reality of the situation is that, and we have come to realise, some premises have particularly good facilities for dealing with, for example, wet sheep, we know of one plant which has a tremendous lairage, with very good ventilation, where wet sheep can arrive and be put in and be ready for processing the next day quite hygienically, and they had made that investment some time ago. They are now, in fact, reaping the rewards of that, because farmers can take their stock and they have the facilities that will make sure that they are in a suitable condition the following day for slaughter. So those premises that have good lairages, well ventilated lairages, are already starting to reap some of the rewards. We think the industry in the longer term is going to have to consider what facilities they do have to deal with this issue, because we are certain sure our job is to make sure that the animals do not go through the premises if they are not in a suitable, satisfactory condition.

851. But does it not cause a problem for smaller abattoirs, who because of their layout may not have the facilities actually to layer and to dry out animals in the way that larger plants might have, and that we are having a situation where farmers may be thinking that, "Well, I won't send my beasts to the local, small abattoir, because he won't be able to deal with my cattle and they'll get rejected", so they then transport their livestock many hundreds of miles to a large

[**Mrs Organ** *Cont*]

plant, and this is not terribly good for animal welfare? And if we are actually going to have animal welfare as a quality of a whole farming system, if we are going to have animals being transported hundreds and hundreds of miles to only large plants, local, small-scale abattoirs will not be able to deal with those animals that are deemed 3, 4?

(*Mr McNeill*) Obviously, if there were any concerns with the vets, you must be aware that, of course, our veterinary staff are responsible for the welfare of animals and undertake *ante mortem* of animals arriving, and animals that had come long distances certainly would cause them some concern if they had arrived stressed and in an unsatisfactory condition. From a welfare perspective that would not be acceptable and they would take suitable action. We are not aware that that has been the case, or that small premises have been particularly disadvantaged by this Policy. But the Minister has made it clear to this agency, and to me, as Chief Executive, that consumers are its express priority, I am not suggesting for a moment that he is suggesting welfare is not important. But the Clean Livestock Strategy is for the protection of consumers; dirty animals cannot be processed hygienically, that is the fact of the matter. It is for farmers, hauliers, livestock markets and the plant operators, and indeed the Meat Hygiene Service, to ensure that does not happen. There is a big learning curve here, and we are well up it this year, and it is our intention to make sure we stay up it next year.

852. Can I just ask you, finally, what happens to the animals that are rejected for slaughter, the ones that have been held over, they have been left but they are actually rejected for slaughter, what happens to those, do they go back?

(*Mr Soul*) There are a number of things which can happen. In the worst case, supposing it was a casualty animal that had gone down in the vehicle, or something was absolutely filthy, in category 5, it could not be returned back to the farm of origin, for animal welfare reasons; that will be destroyed and the carcase will be disposed of, it will not go for human consumption. There are other cases, and the majority of cases, where there are facilities at the lairage, some of them much better than others, as Johnston was explaining, where the animals can be held over and dried up, or cleaned up; there will be other cases where the animals are returned to the farm of origin because there are not facilities at the slaughterhouse to clean them up.

853. Which goes back to my point that, if it is a smaller abattoir that cannot deal with the animal, the poor animal is actually doing endless journeys, backwards and forwards, which is back to their stress?

(*Mr Soul*) Yes, but in reality it is not like that. The very small slaughterhouses tend to buy their animals from local farms, they go and see the animal before they buy it, or they buy it in a local market and they choose the nice clean animal to purchase.

Mr Todd

854. A collection of small questions relating to the visit we made to York last year. You have set out the reliance on your OVS team, and your memo. shows that, although you have reduced the number of contract OVSs in the period that you have had responsibility for delivery of a veterinary service, the number of hours that they give is virtually identical. Do you think that the direction should be towards the reduction of contract OVS cover, or are you satisfied with the current arrangement?

(*Mr McNeill*) We have circa 500 individuals who work for us, on and off, on a contract basis as OVSs. Where we are dealing with small premises, as we discussed earlier, which perhaps only operate a day or two days a week, it is very effective for us to use local veterinary practice staff, local veterinary surgeons, who are qualified as OVS for this work, as it may be difficult for us to have a full-time employee and find something to fill the remainder of their working week. So, from an operational point of view, there is a lot of value in using Official Veterinary Surgeons from practices throughout the country. Having said that, I think, certainly, in some areas, if we could identify and recruit suitable OVSs, we would wish to increase the number of directly employed OVSs. We have advertised on a number of occasions; there is tremendous demand for veterinary surgeons and so we found it difficult to recruit as many full-time employees as we would have wished in this area.

855. I have a second question, I think you have had notice on, on bad debts. I do not want to take up people's time by pursuing that now. I think, when we visited, you said that there were a variety of legal constraints which prevented you from fully recovering some of the costs in the Service; perhaps you could set that out in a note to us?

(*Mr McNeill*) Certainly.

856. And if I could add to that the similar issue of the recovery of SVS charges, as well, which are currently, I think, borne by the taxpayer, and on which I think you again said there were some constraints as to whether you could recover those costs. I was also concerned about the issue of transport of SBM material from plants supervised by the MHS; what arrangements are in place to ensure that the transit out of those plants is safely conducted?

(*Mr McNeill*) Our responsibility ends at the curtilage of the licensed premises, but if we were aware or had concerns about the vehicles that were being used to transport SRM we would liaise with the local authority, who have the actual responsibility for ensuring things are as they should be.

857. So it lies with the local authority to ensure that SBM material removed from your plant is safely transported and then taken to wherever it is supposed to be?

(*Mr McNeill*) Yes, we have a very good working relationship with local authorities, as they are obviously involved in enforcement in the retail sector.

858. Are vehicles that carry SBM material labelled?

[**Mr Todd** *Cont*]

(*Mr Soul*) Yes, they are, they are required to be labelled. I should just say that where the vehicles, or the containers, are on the licensed premises then we have responsibility within the curtilage, and we have taken enforcement action against some transporters of SBM material because the vehicles were not satisfactory.

859. Right; so if a vehicle were involved in an emergency those arriving at that emergency would have a very clear brief of what this vehicle contained, or had contained before it emptied out into the road?

(*Mr Soul*) Yes, it should be apparent as to exactly what the material was.

860. Because there were certainly comments made at the slaughterhouse we went to that was not necessarily the case, in their experience?

(*Mr Soul*) Which is implying a lack of enforcement, presumably?

861. Indeed so?

(*Mr Soul*) Yes.

862. Finally, I had a point about comparisons on charging for your services with the European Union; again, could you provide that in written form, rather than my taking up the time?

(*Mr McNeill*) Yes.

Mr Hayes

863. I would like to reinforce that, if I might, through you, Chairman. I have had certainly questions raised with me by constituents on charges, and I would be interested in, I appreciate you cannot give it now, some details on charges, costs and staffing levels, if that would be possible, Chairman, following Mr Todd's question?

(*Mr McNeill*) Yes, Chairman.

Chairman

864. I would just invite you to reflect on that, Mr McNeill. You are a decent man, I am sure. We do hear a lot from farmers about their concerns about the various charges that are being imposed on them at a time when farming incomes are suffering very sharp reductions, so I am sure you are doing all you can to keep those charges to a minimum and making sure the burden is minimal, and indeed finding ways, where possible, to pass the charges up the chain to the supermarkets, rather than down the chain to the farmers. Is it beyond your wit, do you think, to find a way of doing that?

(*Mr McNeill*) Chairman, the performance targets for the agency also require us to run in as effective and economic and efficient a manner as possible, as indeed for most agencies.

Chairman: I am sure you will keep to that target particularly, above all, in the future, Mr McNeill. Thank you very much indeed. We are very grateful to you. There are one or two issues we have not had an opportunity to raise with you today, during this evidence session; we might write to you about those, if we may. You have promised us one or two additional pieces of written information, which the Clerk will pursue with you, but we are grateful to you for your time and trouble. Thank you very much indeed.

Supplementary Memorandum sumbitted by the Meat Hygiene Service (C120)

The MHS has, in appropriate cases, of infringement of the rules, the power to prosecute and withdraw licences. Is the level of prosecutions increasing or decreasing?—what has been the pattern since the establishment of the MHS?

There is a spectrum of enforcement action that authorised MHS staff can take to make sure that licensed premises operate within the law. This starts with informal oral advice and guidance, and proceeds through written advice and warnings to the service of statutory notices, and ultimately to the prosecution of an individual and/or recommendations to the licensing authority for licence revocation.

MHS enforcement action has been stepped up since the launch of the Agency in April 1995. From April 1995 to December 1996, the MHS issued a total of 153 formal notices. The level of formal activity in 1997 has been as follows:

STATUTORY ENFORCEMENT ACTION: 1997

Date	*Type of Action*				
	Minded-to notice	*Regulation 10 notice*	*Improvement notice*	*Emergency prohibition notice*	*Voluntary plant closure*
1997					
January	24	8	2	0	0
February	64	20	1	0	0
March	34	10	25	0	0
April	16	8	21	0	1
May	16	22	2	0	1
June	133	16	29	0	0
July	106	47	35	3	1
August	111	42	61	1	1
September	66	39	73	0	0
October	105	28	28	0	0
November	64	20	17	1	0
December	74	52	17	0	0
Total	813	312	311	5	4

The number of successful prosecutions since the launch of the MHS has been:

1996: 7

1997: 11

1998 (to date): 2

Since 1 January 1997 the MHS has submitted over 90 premises for one or more investigations with a view to prosecution. Many such cases are still being pursued.

Licences may be revoked for a number of different reasons, including failure to comply with the hygiene requirements of the various Regulations or where premises have ceased operating, or in some cases, where the nature of the business carried on at the premises has changed.

The MHS can make a recommendation to the licensing authorities to revoke a licence on hygiene grounds. Since 1 January 1997, the MHS has recommended seven premises for licence revocation. Three licences have since been revoked on hygiene grounds.

Information on both informal and formal enforcement action and licence revocation is included in the monthly Meat Hygiene Enforcement Report published by MAFF.

Details on MHS charges and how they relate to staffing and other costs?

In accordance with EC Directive 85/73/EEC (as amended) the MHS is required to recover the costs of providing its inspection service from the occupiers of licensed premises. Its hourly charge out rates for Official Veterinary Surgeons (OVSs) and Meat Hygiene Inspectors (MHIs) are determined by reference to historic and projected overhead costs, and attendance hours information. The hourly rates for contract OVSs are determined by open competitive tendering for individual premises.

The hourly rate can be divided up into two elements. These are direct costs: the cost of an MHI or OVS plus employers pension and National Insurance contributions for directly employed staff, and overhead costs; all other administrative costs (excluding certain non-chargeable costs such as bad debt, cost of capital). A copy of the 1997–98 MHS Charging Guide is attached explaining the full details behind MHS charges.

Recovery of Specified Risk Material (SRM) charges

The MHS enforces controls in licensed abattoirs and cutting plants on the removal and disposal of Specified Risk Material (SRM) from cattle, sheep and goats. The controls were extended from 1 January 1998 to include the spleen of all sheep and goats, and spinal cord of sheep and goats over 12 months of age. The controls are an indispensable part of the measures to protect human health and eradicate BSE.

It was proposed that, from 1 April 1998, SRM costs should be recouped from industry. However the Government has decided that these charges will not be recovered from industry from that date, as previously planned, recognising that, at this time, they would represent a heavy additional cost.

Level of bad debt and MHS's success in pursuing these debts. Must irretrievable bad debts fall to the Tax Payer?

EC Directive 64/433/EC requires meat placed on the market to have undergone inspection by the competent authority of a Member State. A separate EC Directive 85/73/EEC (as amended) requires the competent authority of Member States to recover the costs of providing this inspection service from the occupiers of licensed premises.

It is the unequivocal responsibility of plant operators to pay these inspection fees.

It is correct that a number of plants are not paying for the MHS inspection service. However, every effort is being made by the Meat Hygiene Service (MHS) to recover the full amount of all sums owing by such operators.

The MHS issues a "warning letter" before action to all plants whose invoices remain unpaid after 21 days and which are not subject to query. If payment has still not been received after the warning period, the case is passed to the Legal Department of MAFF for immediate legal action. All proceedings against plants who refuse to pay their inspection proceedings are pursued vigorously and could lead to insolvency action being taken against persistent non-payers.

Legal advice is that the EC Directive 85/73/EEC (as amended) does not allow irretrievable bad debt to be recovered from industry.

Details of meat hygiene inspection charges to industry in other EU member states?

Council Directive 85/73/EEC (as amended) on the financing of veterinary inspections and controls, requires Member States to recover the costs of those hygiene inspections carried out at licensed fresh meat premises in accordance with harmonised EC meat hygiene rules. The Directive sets minimum standard charges (in ECUs) applicable in all Member States, for hygiene inspections of red meat, poultry meat and game meat dependent on the species and size of animals being slaughtered. Subject to meeting specified criteria, such as the efficiency of operations at individual plants, the Directive provides for the standard charge to be abated by up to 55 per cent. Conversely, where the actual cost of inspection exceeds the standard charge, the Directive provides for actual costs to be charged. Similar principles apply in respect of charges for cutting plants. The European Commission is responsible for ensuring that individual Member States comply with their Community obligations. The MHS does not have information on how the meat hygiene inspection charges are actually applied in other Member States.

Correlation between HAS scores and microbiological burden of meat?

No studies or evaluations have been carried out by MAFF or the MHS with the sole objective of measuring the microbiological standards of the finished product from slaughterhouses and cutting plants against their HAS score. However, as part of a wider MAFF funded research project, Bristol University has published results (*Veterinary Record (1996) 139, 587-589 W R Hudson, G C Mead, M H Hinton*) of a study which concluded that HAS scores are a useful tool in predicting the ability of an abattoir to produce carcases to sound microbiological status, especially the categories concerned with slaughter and dressing, and personnel and practices. A copy of the article is attached.

MHS Response to Association of Meat Inspectors (AMI) Memorandum

The MHS was sent a copy of the AMI memorandum by Peter Comrie, General Secretary of the AMI. The MHS wishes to make the following points:

Allegation that hygiene standards are disregarded

The AMI expresses concern about the results of disregarding hygiene and inspection standards. It is the responsibility of MHS meat hygiene and inspection teams (OVSs and MHIs) to enforce hygiene and inspection legislation in licensed fresh meat premises. Inspection teams have been given very clear instructions from MHS Senior Management on the very high hygiene and inspection standards that they must enforce. The increased level of enforcement since the launch of the MHS illustrates that rigorous action is taken to ensure legislation is complied with.

HAS scores are too optimistic and easily manipulated

Like all assessment systems that require an individual to exercise his/her professional judgement, HAS contains an element of subjectivity. Measures have been taken to improve consistency of HAS scoring as far as possible. These include:

- extensive training of OVSs;

- external audit of the system, by the Veterinary Public Health Unit of the Joint Food Safety and Standards Group in England and the State Veterinary Service in Scotland and Wales;
- a review system to allow plant operators to query the basis for a particular score;
- publication of scores, where appropriate, as a 3-month rolling average; and
- establishment of an advisory panel to standardise guidance and scoring.

HAS scores broken down into red and white meat slaughterhouses, cutting plants and by geographical regions have been published in the Meat Hygiene Enforcement Report since July 1997. The HAS scores of individual licensed slaughterhouses and cutting plants have been published in the report since January 1998.

Only outcome of Hygiene Advice Teams (HATs) was to reduce inspection hours

At its launch the MHS had little reliable information about the level of standards it had inherited in licensed premises. Consequently, the Hygiene Advice Teams (HATs) were set up:

- as a means to assess operational hygiene and animal welfare standards as soon as possible after launch. The HATs provided a detailed database of information and baseline standards against which the MHS's progress could then be measured;
- the launch of the MHS involved the transfer of many staff from local authorities. It was necessary to review staffing levels in order to correct anomalies and achieve consistency of inspection levels within plants. The HAT team considered the appropriate amount of OVS supervision and meat inspection hours for each plant and made recommendations to Regional Directors. As a consequence supervision levels in some plants increased whilst at others it decreased and
- to provide technical advice to plant operators and MHS staff in order to promote best practice and improvements in standards where appropriate.

MHS doubled inspection workforce in March 1996 to comply with legislation that had been in force for years?

Since April 1995 the MHS has operated against a background of changing legislation concerning BSE. The MHS was initially able to enforce the increased requirements within its existing resources. However, additional inspection resources were recruited and trained after March 1996 following the introduction of the enhanced Specified Bovine Material (SBM) controls and the Ministerial direction to the MHS to take all possible steps to ensure the full and complete removal of SBM from carcases and in particular to provide constant supervision in the slaughterhall during the slaughter and dressing of all bovine animals to ensure the protection of public health.

2 March 1998

Memorandum submitted by The Royal College of Veterinary Surgeons (C55)

INTRODUCTION AND SUMMARY

1. The Royal College of Veterinary Surgeons (RCVS) welcomes the opportunity to comment on the Agriculture Committee's inquiry into current issues of concern relating to food safety which any new agency will have to address.

2. By way of background, the RCVS is the UK statutory body responsible for the regulation of the veterinary profession, operating under the Veterinary Surgeons' Act 1966. It is the competent authority in relation to professional conduct, registration and free movement, education and training.

3. The RCVS has submitted comprehensive comments to the Cabinet Office on Professor Philip James' proposal for a Food Standards Agency. Our response is enclosed at Annex 1[1].

4. Professor James' report identifies the current fragmentation and split responsibility for food safety and the potential for conflict between food production and food safety. The RCVS welcomes the proposal for a Food Standards Agency as a first step in the process to improve food safety and the public perception of food safety. While the concept is sound, considerable work is still required to clarify the detail and ensure that any new scheme will work in practice.

5. In our view there needs to be more detailed consultation in a "green" paper before recommendations are finalised in a "white" paper and legislation. In order to ensure that such an Agency as is now proposed will live up to the expectations and objectives set for it, the detail of how it will operate at "grass roots" level needs to be fully examined, along with the inter-relationships that will be necessary with other organisations and individuals working in the area.

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[1] Not printed.

KEY CONCERNS

6. The veterinary profession was not formally consulted prior to the publication of Professor James' Report. We have, however, met with Professor James since and were encouraged by the way he responded to our views.

7. The role of the veterinarian in public health is of paramount importance and is enshrined in EU legislation.

8. Veterinary surgeons are the only people who, on identifying disease in animals, are trained to recognise the potential risk to humans through the food chain.

9. The remit of the proposed Food Standards Agency is quite diverse with responsibility for public health not only in relation to food safety, food standards and labelling, but also nutrition, genetic modification and the safety of veterinary medicines. It is our view that the agency should focus primarily on standards of food safety and not be detracted from its main function. Care should be taken not to confuse what is safe and unsafe with what is good and not good for you.

A COMPREHENSIVE STRATEGY

10. The Federation of Veterinarians of Europe (FVE) recently approved a policy document on a "Stable to Table"/"Farm to Fork"/"Plough to Plate" approach to food safety.

11. Paragraph 92 of this document clearly summarises the need for and importance of such a policy and the involvement of veterinary surgeons:

> "Veterinarians are present at every link in the chain and have the knowledge and expertise to audit the standards of animal health, animal welfare and public health from "stable to table". Safe food can only be produced if healthy, clean, residue and stress free animals are delivered to the slaughterhouse where a dedicated inspectorate, headed by a veterinarian, can ensure that high standards of animal welfare and food safety are maintained. This assurance should apply to all products of animal origin throughout the processing and marketing stages".

12. A copy of the FVE paper is enclosed as Annex 2[1] to the RCVS reply to the Cabinet Office on the Food Standards Agency proposal.

13. As background information for the Committee, the FVE is the European lobbying organisation. Its membership currently comprises all national veterinary organisations from EU member states and most other European countries as observer members.

14. The RCVS has long recognised the importance of the veterinary surgeon in public health. As a result, there has been a considerable focus on the veterinary public health content of the curriculum in the veterinary schools with RCVS recommending a higher priority for this subject. Furthermore, RCVS is examining ways of promoting interest and careers in veterinary public health in order to attract graduates to these areas of veterinary activity.

EUROPEAN DIMENSION

15. The Committee should be aware that the European Commission has recently issued a Green Paper entitled "The General Principles of Food Law in the European Union". A copy of this document is enclosed at Annex 2[1].

16. The aims of the Green Paper are:

- to examine the extent to which the legislation is meeting the needs and expectations of consumers, producers, manufacturers and traders;
- to consider how the measures to reinforce the independence and objectivity, equivalence and effectiveness of the official control and inspections systems are meeting their basic objectives to ensure a safe and wholesome food supply and the protection of other interests of consumers;
- to launch a public debate on our food legislation, and thereby,
- to enable the Commission to propose appropriate measures for the future development of Community food law, where appropriate.

17. It is imperative therefore that consideration is given to EU initiatives in the area of food safety so that future UK arrangements are in line with EU thinking.

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[1] Not printed.

18. From the veterinary point of view, there is one interesting concept in the EU Food Policy paper. No consideration has been given to disease control in animals—which is vital when considering foods of animal origin. If no resources are invested in effective disease control, then the source of many problems is being totally ignored.

19. This omission could stem from the fact that responsibility for food safety within the European Commission has recently been transferred to Directorate General XXIV (Consumer Policy and Health Protection) form Directorate General VI (Agriculture). There is no link between those who deal with animal health and those who deal with public health, which is essential if food safety is to be effectively monitored.

CONCLUSION

20. Much thought and discussion is still needed on the proposed Food Standards Agency and how the different parties and responsibilities can best be woven together to ensure that the new arrangements improve the confidence which consumers have in the food they eat.

21. The veterinary profession has much to contribute.

22. The Royal College of Veterinary Surgeons would therefore welcome the opportunity to give oral evidence to the Committee to further emphasise our main points, discuss some of the details and answer any particular queries.

23 October 1997

Examination of Witnesses

DR LYDIA BROWN, Junior Vice President, MRS JILL NUTE, Treasurer, DR MAC JOHNSTON, Senior Lecturer in Veterinary Public Health, PROFESSOR PHILLIP DUFFUS, Professor in Clinical Veterinary Medicine, University of Bristol, the Royal College of Veterinary Surgeons, examined.

Chairman

865. Dr Brown, thank you very much indeed for coming before us today, I am very grateful; also I think I am grateful to you for standing in at relatively short notice, as well, if that is the case?

(*Dr Brown*) Indeed, Sir, that is correct.

866. So thank you very much indeed. We are particularly grateful for that. And thank you for the written evidence you have given the Committee, which we also appreciate. Could I invite you to introduce the other members of your team?

(*Dr Brown*) Yes, I certainly will. I am Dr Brown, I am Junior Vice President of the Royal College of Veterinary Surgeons, and I will be acting as Chairman of the team, and, therefore, hopefully, fielding your questions to our experts here. Dr Mac Johnston is on my left, he is a Senior Lecturer in Veterinary Public Health, from the Royal Veterinary College, London, he is also a member of the EU Scientific Committee on Veterinary Public Health and a member of the Advisory Committee on the Microbiological Safety of Food. On my right is Mrs Jill Nute, who is Treasurer of the Royal College; she is a partner in mixed practice in Cornwall and an OVS for North Cornwall and a Principal OVS with the Meat Hygiene Service. And to her right is Professor Phillip Duffus, a member of RCVS Council, he is Professor at the University of Bristol, heading up the Department of Clinical Veterinary Science. His particular interest is in education of veterinary students, particularly in meat hygiene and food safety.

867. Thank you for that. Now in the evidence you have given us you express the general support for the Food Standards Agency, which I think every organisation has expressed to this Committee, but you did have a lot of detailed reservations on specific points. I wonder whether you feel those flowed in part from the fact that you had not been actually invited by Professor James to give your views before he actually published his report. That was a rather surprising omission, was it not, given your importance in this process?

(*Dr Brown*) That was certainly very strange to us, that the veterinary profession appeared not to have been consulted; but I should say that since that report was published we were able to have a meeting with Professor James and we found that many of our concerns were echoed in comments which he had made. We do welcome this whole approach to a Food Standards Agency; our only fear is that the White Paper, as presented, is a rather skeletal affair and we would have hoped for some more muscle and skin to put on the animal, as it were, in order for us to judge perhaps better how the Agency will work.

868. In that case, we will be asking you back, I expect, later on, Dr Brown, to give us evidence on the Bill, when it is actually available to this Committee. Could you give us some specific concerns that you think are unaddressed in the White Paper?

(*Dr Brown*) Yes; perhaps I could turn to Mrs Nute, who may wish to talk about some of the issues. We refer to these specifically in section 24 of our response on 20 June, and I hope you have those in front of you.

(*Mrs Nute*) Yes; we are looking particularly at the detail, but we would like to make the general point, first of all, that we must not look at food safety purely as a microbiological problem with meat, we must look at food safety, as we heard from the MLC, encompassing all the stages, from farm through factory and food processing to the family home, as well as exports and imports. Our particular concerns are that we do not forget both red and white meat, and in particular fish meat, which nobody has

[**Chairman** *Cont*]

mentioned, and we must also remember milk and eggs, as well as all the other processed things that involve these, and that we would ask the Committee to bear this in mind, that we cannot just look on meat as being the only problem in food safety.

(*Dr Brown*) If I may, Chairman, one of the specific queries we had was, we were wondering, in terms of European legislation, who would the competent authority be; that is rather an issue for us, as veterinary surgeons, as you know. One of the responsibilities of veterinary surgeons is to ensure certification of a particular standard, these are the Twelve Principles of Certification, of which I believe you have a copy, and these are the Principles by which vets have to sign certificates. It is a very serious issue for us, because if we fail in this respect, in fact, we can be held up on a disciplinary charge with our own College. So we assume that the competent authority will be MAFF; are we correct in that assumption?

869. We had better not try to answer your question, that is probably for the Minister when we have him before us. But I would just point out to you, Mrs Nute, we are, of course, looking across the whole range of food safety issues, and our evidence session next week is on pesticide issues. But the fact remains that meat is one of the most important sources of food poisoning and I think it is right that we should concentrate a lot of our questioning on that issue, I think you would agree with that, would you not, Mrs Nute?

(*Mrs Nute*) Yes, we accept that entirely, and I think perhaps Professor Duffus can say something on the microbiology as being one of the leading problems with meat.

(*Professor Duffus*) Yes, indeed. We accept the fact; in fact, it was quite interesting, listening to the MLC, because if one could make animals immune to all these microbiology organisms we would not be really having this problem, but of course we reiterate the problem I think has just been brought up by my colleague that this will not stop a contamination from the human source later on in the food chain. But the veterinary profession believe that we need a lot more research in order to produce vaccines that actually will work and will be able to control this microbiology contamination, where I think the MLC were quite right in giving us the different sources that exist.

870. Can I change the subject a little bit. Are you still concerned about the proposal to put the Food Standards Agency pretty well solely under the Department of Health; is it your holistic approach to the food chain which leads you to have that concern? Do you still hold that concern; do you feel the Agency could, in fact, obtain the advice it needs on the veterinary and farming issues and still be under the control of the Department of Health?

(*Dr Johnston*) I can see the reasoning behind the Department of Health being the lead in this, and I can see why over the recent years and the critical comment about the Ministry of Agriculture they would not, obviously, be a front-runner to lead on the food safety agency. My concern is that there are a number of grey areas where you have to actually look at the health of the animal herd and the animal flock, and that is rightly the domain of Agriculture Ministers and, for that matter, the State Veterinary Service. And I think where I get a little bit concerned is where the grey area, as we have heard about before, but relating to the farm gate, does DH come behind the farm gate, or does Agriculture come behind the farm gate, or do they both come behind the farm gate, according to the risk that is being assessed at that time. I do not think the White Paper has actually come very clearly on that, and I think perhaps each of the two Ministers might have differing views on that, as it looks. I can see the changes that have taken place, both in Agriculture and in Health, in preparation for the food safety agency, and I can see much merit in the suggestions, bringing the Meat Hygiene Service in, drug residues, and whatever else in. But I think there is an awful lot of wiffly-waffly bits in the middle that need to be clearly stated, from a food safety point of view, and that I would say, from the Royal College point of view, everything must be decided having assessed the risk, I am not saying HACCP, because that is a nice buzz-word, but I think we have got to assess what is the risk and who is best fitted to actually assess it, monitor it, and once the risk is determined actually to act on it and do something about it.

871. Are you now having a satisfactory dialogue with the Government to address these issues, are you being invited to make your responses in a very open way, are you happy about that process?

(*Dr Brown*) I can say that we are, Chairman, yes.

872. So we look to have these matters clarified in the draft Bill, hopefully, after Easter sometime?

(*Dr Brown*) Yes.

(*Dr Johnston*) Certainly, I was in the meeting with Professor James, and that was a very satisfactory meeting, and the whole thing had moved on a lot from the interim report from Professor James.

873. But if you had been involved at the beginning it might have been easier?

(*Dr Johnston*) Indeed, yes.

874. One last introductory, general question, about the responsibility for these matters in Europe. You expressed concern in your memorandum to us about the transfer of responsibilities from DG VI to XXIV; do you still feel that you stand by those concerns about that transfer, do you not think that such a transfer does at least provide public reassurance that food safety is not really compromised in European discussions?

(*Dr Johnston*) The answer is, having been there during the evolution and the changeover, there were periods of, what shall we say, discord in Brussels, within Brussels, and I think there was a degree of protectionism in DG VI over "We don't wish it to go to XXIV, and what do they know about animals?". I think the new Steering Committee, with the underlying Scientific Veterinary Committees, is a way forward, and it has removed many of the problems. The UK people in Brussels were immediately disadvantaged, having come from the UK, because they were seen to be representing the UK, not representing the science of the matter, and I think the Scientific Committees were muddied with the Standing Committees, which had a slightly more political overtone on their judgements. And many of the food safety issues that were dealt with previously

[**Chairman** *Cont*]

by the Animal Health Scientific Veterinary Committee and the Public Health Scientific Veterinary Committee got lost in the politics of the issue, rather than the science of the issue, before it actually reached the Commission. Hopefully, looking at XXIV and the new Scientific Veterinary Committees, as they are currently working, since November, there is greater hope of science actually having a say.

Chairman: That is an encouraging and rare thought.

Mr Hayes

875. You say in your written report that you feel that, the remit of the Food Standards Agency being diverse, you need to focus on particular areas, and you specifically exclude veterinary medicines and genetic modification. It is in chapter 9. Given the likely nature of the public debate on that, a lot of consternation, quite a stormy issue, and already that is coming to the fore, and the possible implications in the food chain of veterinary medicines, you know, being passed through, do you not feel that that is an omission which you cannot afford to make?

(*Dr Brown*) I actually feel we may have misrepresented our position on that, because we have all looked at this response and, in fact, we do not get that sense from comment number 9. We do believe that the residues issue is terribly important and is part of food standards. I think the point that we were trying to make is that we should not be talking about what we should and should not be eating, as opposed to what is and is not safe, and I think we were there thinking in terms of the Government advising the consumer on what they should be eating. So, in fact, I think we are in agreement with you on the medicines precaution.

876. Right; so you would be with us on veterinary medicines in the food chain, but you would see that as a legitimate area for the Food Standards Agency to be involved in. What about genetic modification, because that is clearly going to be a very lively debate, and you would have thought the Food Standards Agency would have taken a view on it; if they did not, the public might be quite surprised?

(*Professor Duffus*) I think this is an interesting point, because we can always throw it back to you, because we have got a problem with producing vaccines; now some of the innovative vaccines of the future may well be, will probably be, for some of them, genetically modified organisms, and it is going to be quite interesting to know whether one would gain permission in order to release some of these and use them in the food chain, in order to reduce the contamination, which, of course, is a worry. So that is one area where I think the veterinary profession would have a view. On the other angle, from the point of view of using genetically modified drugs, such as BST, etc., I feel that is another issue, if you like, which is one I personally do not feel all that strongly about, but some of my colleagues may have another view on it.

877. I do not want to labour the point, but you talk about its focus being on food safety; could you, from your perspective, from your position, define how you see that as being separate from the issues that I have raised?

(*Dr Johnston*) I think, what we should be saying, and we may need to rewrite that paragraph, for clarity, what we are saying is that anything that impinges on the safety of the food of animal origin, which is intended for human consumption, is rightly under the food safety agency. On the other hand, very specific points which would, absolutely rightly, be addressed by such an agency would be issues such as antimicrobial resistance, and they would also look to the current VMD and VPC actions on the licensing of drugs and the setting of the guidelines by which we, as vets, can actually use these medications. But I am not saying that the food safety agency should decide whether fluoroquinolones should be used for poultry. I think there is quite a nice licensing procedure that is already in existence. I think FSA should look at how they are licensed, to see if there is any impact on the safety of food of animal origin.

Mr Hayes: That is much clearer now. Thank you, Chairman.

Mrs Organ

878. Can I move on to the role of veterinarians in the food chain generally. You quote from the recommendations of the Federation of Veterinarians of Europe report that there is a need for veterinarians to be present at all stages of the food chain, and you have been talking about that. Do you believe that these recommendations are satisfactorily met in the UK at present, and, if you believe that they are not, how should the system be improved, and if the system should be improved who should be paying for that?

(*Mrs Nute*) First of all, I would say that the Royal College does not take a view on who should pay, that we do not feel is part of our concern. Looking at fresh meat, the answer is, yes, it is getting there, but the Meat Hygiene Service is still a very new organisation, in terms of the length of time it has been in existence; it is not there yet but it is getting there. As regards improvements, I hope that the Meat Hygiene Service has these in hand, and, again, I can only speak from a Royal College point of view, rather than as an MHS contractor, because that is not why I am here now; but I think the Royal College is satisfied that the Meat Hygiene Service is making efforts to communicate, to educate and to update, where necessary. Again, I would repeat that we see this as a broad view across fish, milk, milk products, dairy products, eggs, as well as meat, and there has been remarkable success in some areas in these things. We do have a problem, which I would like to pass to my university colleagues, with the education of the future veterinary surgeons, and we also would like, as the Royal College, to look at, you have talked a lot about the need for integration, and obviously this whole ethos is to bring together those people who work in different areas but to bring them together, we would like to see how this is going to work. We believe that surveillance, and you talked about veterinary medicines residues are very important,

[**Mrs Organ** *Cont*]

that these should be monitored, we have Farm Assurance schemes, but we need appropriate surveillance and we need appropriate integration; we do not need unnecessary duplication. And I would like to pass over perhaps to my university colleagues, to take the education part of it further.

(*Professor Duffus*) I think, on the education side, there has been quite a sea-change in the veterinary profession over the last ten years, or so, where I think the Royal College have put pressure on the six UK schools, in order to emphasise to a greater extent the public health and food safety aspects of the veterinary curricula, and I feel that has been quite a move forward, and we have seen how the OVS scheme, for instance, has been described in detail. And I feel that veterinary schools in the United Kingdom are now getting to grips with this problem. For instance, taking Bristol, my own university, as an example, it has its own abattoir and we run a tremendous amount of education beyond the veterinary undergraduates, both for OVS courses, for butchers, for anyone in the trade. And I think we will see the veterinary profession, all the schools, getting to grips now with the educational aspects, from the undergraduate right through to the people actually within the profession itself, in various bodies. We have got a shortage of vets in the United Kingdom, there is no question of that, and this is a complicated subject the Royal College feels very strongly about, because we obviously have to bring in a lot of vets from overseas, particularly Europe, in order to fill the holes, that we have got this huge gap, and it is a difficult one. It is not through lack of demand. Bristol had 1,800 applications for 65 places this year, this is from UK people wishing to become vets; but that is another issue.

879. So you are saying that we are getting there in one sector in the meat livestock—

(*Mrs Nute*) We are getting there in the actual hands-on in the meat plant, if you like; there are other areas.

880. But you are talking about more with the fish and dairy and eggs, and you are saying that we do not actually have enough training facilities for vets for the future requirements that we would like to see of veterinarians in the food chain?

(*Professor Duffus*) I think we are training the veterinary undergraduates better now. What I am saying is I do not think we are training enough of them, in order to try to fulfil the demand that this level of progress that we have been talking about today is going to produce over the next few decades.

881. Can I just ask quickly about that, because I do not know: how many vets a year are we turning out from our schools at the moment?

(*Professor Duffus*) Currently, we are turning out somewhere between about 350 to 400 UK vets a year; working its way through the system are going to be more vets, because we are taking more people who are paying fees only, or full cost fees, on home-grown individuals, so I think the situation is being helped to some extent. But we are still bringing in and registering every year probably more, if I am right, individuals, vets, from overseas than we actually are producing.

882. So we are only meeting sort of 40 to 45 per cent of veterinary requirement, in a way; is that what you are saying?

(*Dr Johnston*) Can I add to this a little bit, because this is a matter that the Royal College has raised directly with Agriculture Ministers. Currently, university veterinary schools are limited in the number of funded places they can take by HEFCE; if you take more than your allocated slot, which in London is 80, and 65 in Bristol, you are penalised, financially, if you take extra. So the only way we can top up is by taking full fee students. Now the great joy of this is you are getting students that have done a first degree, and many of them have done agriculture-related degrees, so coming through the system, for example, our second year is 130 students instead of 80 students, you are bringing students through that have done other degrees, that are probably better fitted to actually fulfil this very role we are discussing today.

Chairman

883. And, surely, the people who typically apply to be vets want to look after living animals rather than dead ones, this is always the thing that surprises me, and that the market for vets has been looking after dead animals, has it not, in food safety terms, at least?

(*Dr Johnston*) Part of the selection committee procedure is to actually ask them have they been to an abattoir, are they aware of the role in terms of the production of food of animal origin, that is up front in every school syllabus; and certainly at London it is a question that is asked at interview.

884. But the growth market for vets is in that side of the business, not in little pussy-cats, in vet surgeons in country villages?

(*Professor Duffus*) It is in all those aspects.

(*Dr Brown*) I think it is in many aspects, Chairman. The great value, I think, of a veterinary degree is that it does cover a very wide area, and, in fact, we are currently conducting a manpower survey in the profession, where every member of the profession is being sent a questionnaire, so that we can find out exactly where all of our members are, what sort of veterinary jobs and non-veterinary jobs they have been doing throughout their career, and, in fact, where the opportunities may or may not be. So perhaps in about six months' time we may have some specific information on that.

885. But you are concerned that there is inadequate training of British vets being undertaken at present in this country, even with the full fee students you are having, to enable us to meet likely future requirements, and we will continue to have to import vets from elsewhere to meet the particular food safety issues that this Committee is considering at present?

(*Dr Brown*) I think that is true at this stage. I would prefer to say an inadequate number of vets rather than inadequate training.

886. I am sorry, I meant number; the number of vets being trained is inadequate?

(*Dr Brown*) Absolutely, yes.

[Chairman *Cont*]

(*Dr Johnston*) There are problems meeting the current requirements of the Consolidated Directives of the EU.

887. And yet other European Union countries are training an adequate number of vets, more than adequate, because they can give them to us, for us to use?

(*Mrs Nute*) Excessive numbers, because they do not have the same constraints on places, and are specifically training people who will go and work outside their own countries.

888. I do not think I can labour this point now, but I think this is an important point for the Committee to consider. Perhaps you could give us a written note on some of these issues, the restrictions, and what new procedures you would like to see in place, to enable us to make good the deficit?

(*Mrs Nute*) Can I also come back to the point you made, which is absolutely true, that you train basically to try to save animals' lives, not to watch them being dissembled on a factory dissembly line. In fact, if you take the overview, as I do and as do very many people like myself who work as contractors for the Meat Hygiene Service, and I believe you mentioned this earlier, in actual fact, we see this as the best of both worlds, because we see the conception to the consumption route, so we feel we have got a very good overview of the whole process, from farm to table. We see what is happening on the farms, we know what is happening in the local county, or couple of counties, perhaps, we know what the prevailing disease situations are, we know what the weather is like, and if we want to get something in the local paper about, "House your cattle now and put extra straw down, so that you can bring them in clean", we can do that, because we have that sort of organisation to deal with that sort of thing. And, equally, we can then feed back to farmers, as you were saying, this important feedback that we can do on a local basis. As the Meat Hygiene Service has pointed out, there is a place for the contractor, who is satisfying their requirement to maybe put in a few hours, because it is a plant that only operates one day a week, but it also has professional satisfaction for the veterinary surgeon, as a practitioner, who is practising animal health, public health and animal welfare, to what we believe is the best possible degree.

Chairman: Thank you. That is a very helpful clarification.

Ms Keeble

889. In paragraph 18 of your memo. you highlight the issue of disease control and the significance of this not being considered in the EU Green Paper on Food Law. Could you say what you might have in mind that the EU Food Law might contain? In section 18, you put: "there is one interesting concept in the EU Food Policy paper", the fact that it is a concept that is not there, "No consideration has been given to disease control in animals". What do you think it should have in?

(*Mrs Nute*) The very obvious one is tuberculosis, where we have got preventative measures of veterinary surgeons going on to farms and testing animals to see if they have got tuberculosis, and those animals can then be identified and dealt with appropriately. Equally, as again you heard, one of the objectives of hands-on meat inspection, why meat inspectors put their hands on certain parts of animals, is to hold them still while they cut into those particular nodes, looking for evidence of tuberculosis, and we still find primary lesions of tuberculosis in cattle at abattoirs, which have not been tested recently or perhaps have moved from a farm; we still pick up tuberculosis in cattle at abattoirs which would not otherwise have been identified.

890. In part of the EU Green Paper, it actually invites comments about management control of zoonoses. Would some input under there be actually adequate to deal with the issues that you are concerned about, and have you made any representations to them?

(*Dr Johnston*) I think, in crude terms, zoonoses equals Salmonella, as far as Europe is concerned. I think the big problem is that if you look at the northern EU Member States versus the southern EU Member States you have different attitudes to this very topic. If you are talking about northern EU States, we are probably all virtually on the same playing-field, and then you are completely hoisted by the attitude of the southern, who sort of say, "Go away, we don't want to do it." I think what we are saying here is that when you look at this document there has to be proper facility whereby—and BSE is a nice example—do you have the disease or not, but do you have the infrastructure and the facility whereby you could actually recognise or actually identify the emergence, or possible emergence, of a zoonotic disease in the national herd and flock. I think that is the level we are going to. For example, have you got reference laboratories that can actually say that this is E.coli 0157-H7, sorbitol positive or sorbitol negative, and actually we in Britain can actually say that it came from that laboratory in that country we are certain of the standards. So we need national standards and European-wide standards on all zoonotic agents, not just Salmonella.

891. But have you made any representation under that section. I think it was you who actually submitted this, with your evidence, I think?

(*Dr Brown*) Yes. We did make representation through the Federation of Veterinarians in Europe. I am not certain at what stage our representation is, but I know that we have the facility.

892. Thank you very much. It might be quite helpful to see that, at the same time. You mention that we need to have local controls as well as EU controls; would there not be a problem with that, because our restrictions might be seen to be anti-competitive, or are you happy with what Europe would produce?

(*Dr Johnston*) No; the restrictions, I can assure you, will be seen as anti-competitive and against harmonisation. This is the big fight. If you go to the House of Commons Library and pull out Richmond Part I and Part II, the story is all there, back in '89, '90, '91. And many of the suggestions that we are raising yet again have all been aired at that time. And we do things properly in the United Kingdom and

[**Ms Keeble** *Cont*]

then we are required to allow import of products which may or may not be of the same standard. And I think that is a real worry. We do things and then we may well be, for example, following BSE, actually buying in animals that may actually bring in disease. For example, how did we years ago import Leptospira hardjo; by replacing heifers to replace foot and mouth cull. We did not have it until we bought it in. So this is one of the problems we are up against. You know, we clean up our herd, we clean up our act and then we buy in the infections.

893. You have mentioned tuberculosis in cattle and you have mentioned Salmonella and you have mentioned one that I cannot pronounce.

(*Dr Johnston*) Leptospira hardjo.

894. Which other illnesses are you concerned about; are there any other really major ones that you are particularly concerned about that, in your view, need control?

(*Dr Johnston*) The whole gambit of diseases which could actually affect the national herd and flock, which is why we should have a properly staffed, properly resourced State Veterinary Service, that is there to actually make the decisions for the agricultural side, but bridging with the medical people to actually look at the implications subsequently for human health.

895. But which ones are you most concerned about, that are currently known to have implications for human health?

(*Professor Duffus*) There is E.coli, of course, VTEC E.coli, which has been talked about today, I think that is an extremely important one, and vets must have an interest in that, and farmers, because E.coli is a problem in diseases, such as mastitis, let alone an enteric problem in calves.

Mr Todd

896. I was intrigued by your portrayal of us as the good guys and the sort of Latin countries as being perhaps a little on the casual side, on some of these matters. How can you explain the fact that Salmonella in our flock still massively exceeds the level of that of, say, Norway, or Sweden, if you present such a glowing picture of the elimination of zoonotic diseases in our meat?

(*Dr Johnston*) No. I think, actually, I was not comparing ourselves better than Norway and Sweden, which I think is a totally different ball game.

897. You said the northern countries?

(*Dr Johnston*) I included Norway and Sweden with us.

898. I would class those as northern and maybe ourselves as northern, but maybe you see us as part of the problem of the south, sort of these Latin instincts that you are worried about?

(*Dr Johnston*) No, I shall name names, Spain, Greece—

899. But do you really see our record as massively superior in that particular field, in Salmonella, as I have mentioned?

(*Dr Johnston*) I think, if you look in the last seven or eight years, we have made major strides in reducing Salmonella. We are continuing to make major strides. For example, if you look at the egg industry, alright, the surveys are there and the surveys may not actually be showing a significant reduction in the number of Salmonella in eggs, but if you actually look at when the samples were collected versus when a Salmonella vaccine has been introduced into the poultry industry, certainly at the top of the pyramid, and if you look at some of the integrated companies and the major efforts they are putting into the control of Salmonella, at the breeding stage of the grandparents, the quality, the microbiological quality of the feeds, we have made a big stride. I am not saying we are as good as the Swedes.

900. I am not quibbling with your presentation of this as being the good northern guys against the awkward southerners, because I think that our record is a little dodgy as well in this respect?

(*Dr Johnston*) If you go back one stage to my evidence, I actually suggested that we need standardised methodologies in laboratories, so we can compare results here and down there, which is where I run into some difficulty.

Ms Keeble

901. In relation to disease control, and you have mentioned some of the ones you would like to see controlled, how do you view the routine use of prophylactic drugs, for example, as feed additives; and do you think there is a serious problem of the pathogens then developing resistance to antibiotics?

(*Dr Johnston*) I have to declare an interest, because I currently sit on two Working Groups looking at antibiotic resistance and have given evidence to the House of Lords, so not wishing to prejudice anything in that way. Yes, the answer is, the use of antibiotics, sorry, can we use antimicrobials, to lump it all together, which includes antibiotics—

902. I am not a scientist, so I am not much the wiser on the implications of it?

(*Dr Johnston*) The use of antimicrobials in animals undoubtedly leads to resistant bacteria, and these resistant bacteria can and do get into the food chain and do get through into the human population. The correct use of antimicrobials at all stages, under veterinary control, is the responsibility of the Royal College of Veterinary Surgeons, if the members do not follow the rules we can actually put them in front of a disciplinary committee. There are groups of medications which are currently under other licensing, PML drugs, and so on and so forth, that are beyond our control that can be used. Now that, crudely, brings into play the growth promoters and the digestive enhancers, as they are called now. We can get rid of hormones, because the hormones were disposed of by the EU many years ago. And, I suppose I had better get a bit more personal than RCVS, I think there is a need to look very closely at how we use antibiotics, which antibiotics we use, and, more importantly, when we have a new class of antibiotic or antimicrobial introduced, should we actually have additional constraints on their use in animals, should we actually, for example, have a different hierarchial structure of appropriateness of use, rather than run into the problems we have had

[**Ms Keeble** *Cont*]
with the fluoroquinolones in poultry, for example, where it is more than six, eight, ten years that campylobacter resistance to fluoroquinolones in poultry was recognised, and yet it was licensed to be used in poultry. I think you have got to separate out mass medication, where you medicate a group, or a herd, or a flock, for very good veterinary reasons, from the use as a routine, "Well, I've always done it before" sort of approach, which I think is not acceptable.

903. But farmers can administer them themselves, can they not?

(*Dr Johnston*) Some of these products they can get from the merchant, yes.

904. And do you think there is sometimes sort of lax use of the drugs?

(*Dr Johnston*) Yes.

905. In which areas; in which particular bits of farming, what type of animals?

(*Dr Johnston*) It may be deliberate; for example, there is illegal use, there is wrong use, and there is carelessness, and there is the inevitable, that if you are mixing feeds on a farm situation cross-contamination happens very easily. Many of these products have electrostatic ability, they stick to surfaces, so you get it sticking to a surface and then you put the next foodstuff through and it becomes cross-contaminated. So there is a difference between feedmills, under the Royal Pharmaceutical Society, producing medicated feedstuffs on veterinary prescription, where there is a complete clean-down between different products, from on-farm medication, the wrong bag of feed being fed to animals accidentally. So there are many areas where I think things can go wrong in the system.

906. And who do you think should be responsible for dealing with that, do you think that vets should have the responsibility, or who; who is going to be responsible for policing the farmers, I suppose is what it comes down to?

(*Dr Brown*) I think, good use of the local veterinary surgeon is the first key in the attack, because it is that vet who is going on the farm, who should be advising the farmer and giving good advice about which products to use; in fact, perhaps moving from antimicrobials onto vaccines, or other regimes, just improving husbandry, for example, to reduce usage. But then, after that, we can climb up the tree to many other levels of responsibility. But I think that, speaking from the Royal College's perspective, we believe the veterinary surgeon is quite key in ensuring responsible use of medication on a farm.

(*Dr Johnston*) I think it is important to recognise that when a product is used on food-producing animals it has to be licensed for that purpose, so you are using a licensed product.

907. But this, presumably, is one of the issues that we would have to look at once we had got a Food Standards Agency, who is responsible for policing that, whether it is the Department of Health, or MAFF, or who?

(*Mrs Nute*) Which is exactly the point I was making, about how all these different responsibilities can be linked, and we feel this is important.

Mr Hayes

908. Through you, Chairman, is not your view, or you certainly suggested earlier that your view was, that a State Veterinary Service would be more effective in dealing with those matters than a Food Standards Agency?

(*Dr Johnston*) No, there was a combination of the people who are already required to look at these particular products, such as the Veterinary Products Committee, VMD has a role, and also the State Veterinary Service, when appropriate, has its role in terms of residue surveillance and residue testing; but the practitioner who then either prescribes it or actually administers the drug has a major responsibility. I think the whole issue of this will become clearer in the near future. The World Health Organisation, for example, have stated they want to get rid of digestive enhancers and growth promoters, full stop, that they are just too much of a risk.

Ms Keeble

909. How would the presence of a vet in the Pennington Committee have helped in determining the case of the outbreak of E.coli 0157, and preventing further outbreaks?

(*Dr Johnston*) Quite simply, they were looking at something that was being attributed (a) to the abattoir and (b) to the animal that was slaughtered in the abattoir, and if you look at the membership, and I know them all very well, I do not think anybody was there to take the overview from the stable through to Mr Barr's back shop. I think Mr Barr's back shop onwards was rightly the domain of the Environmental Health and other health officials. But, certainly, when they were looking at something that involved live animals, the slaughter process, and so on and so forth, they should have had actually somebody there, and I know somebody, who actually is at the Communicable Disease Centre in Scotland, who would have been eminently suitable, because he is not only a veterinary surgeon, he is very well aware of epidemiological implications and of the enteropathogens, but he was not invited.

Chairman

910. Why do you think you were not represented on that Committee; you obviously know?

(*Dr Johnston*) I can only guess. I think it was considered—I can say here probably quite safely that this Committee did not actually advance our knowledge in any way over what we already knew, and that was that we knew where the controls were. And, if you look at the Barr exercise, we are not talking about the meat was sold to somebody who took it home to cook it and perhaps did not cook it properly, we are talking about cooked meats, and we are talking about throughput and various things in the back shop, which is rightly covered already by the various food hygiene pieces of legislation, which was not being enforced. One of the major recommendations of Richmond was that before you prepare food for retail sale you license the premises, and we got chastised by the then Government, who wanted some of these premises merely to be

[Chairman *Cont*]

registered and not licensed, because licensing says, "Are you fit to do it?", and the whole panoply of local enforcement. I think the other reason was—

911. You must be a little careful here because of *sub judice* rules; although you are protected by parliamentary privilege, you must be a little bit careful if there are any criminal actions outstanding.

(*Dr Johnston*) But I think, also, they were running scared after the Lanark blue episode.

912. But the point is that in inquiries like this there should always be a vet present, that is your firm view, is it?

(*Dr Johnston*) When a live animal is involved, yes.

913. So the live animal is the root of it?

(*Dr Johnston*) In the slaughter process.

Ms Keeble

914. You mentioned previously that you work with colleagues abroad, to have input, for example, to respond to the Green Paper on Food Law in the EU. Do your colleagues elsewhere have similar types of difficulties, and do they have similar perceptions of the risks, and so on?

(*Dr Johnston*) The answer is yes. If you look at the minutes of some of these meetings, the very same issues keep coming up and the frustrations keep coming up.

Chairman

915. Two last questions, if I may, Dr Brown. First of all, the philosopher's stone of this inquiry probably is the search for vaccines that will actually remove the risk of pathogens like a Salmonella entirely from the human food chain. It would be very interesting to hear what you, as vets, think the real prospects are for the development of such vaccines, an authoritative statement; and if you could also say what the advantages and disadvantages would be of pursuing a programme of mass vaccination?

(*Professor Duffus*) Obviously, tremendous advantages, because, in theory, it is correct; vaccination has managed to rid this country of quite a number of diseases. But the first thing, I think, to remember is that the easy diseases, either in humans or in their domestic stock, have been controlled by vaccination, the easy ones were there. The more difficult ones, and you only have to look around the human population and their animals, are proving much more difficult to control, and we are obviously going to have to use innovative methods, often based on molecular biology techniques, in order to control these. I think the good news is that a lot of the ideas and theory and some of the work is there; the bad news is that it costs a lot of money to do this research, a lot of money, and who is going to pay to do that. And, within the universities, with my university hat on now, of course, with the difficulty of getting money to do such research, which is very applied research, and a lot of the Research Councils no longer see this as their remit and will say, "Well, it's MAFF's point of view, MAFF has a strategic view and that may not involve that", it is getting more and more difficult to get the funding in order to do this work, which actually is quite frustrating. Because, in theory, yes, this would be a marvellous thing to do, but you cannot pull these vaccines off the shelf, or off a tree, you have got to do a lot of work, because of the difficulty in doing such experiments, to produce an effective vaccine. So the advantages are there. The disadvantages, I come back to my point I made beforehand, that in my opinion some of these new, innovative vaccines are going to be genetically modified organisms, just through the point of it, that is the way we are going to have to control, and that is something, as a country, we are going to have to come to terms with.

916. But, presumably, there is quite a lot of money there for a pharmaceutical company, if it can develop a vaccine against Salmonella?

(*Professor Duffus*) That is a good point. They have enormous financial resources, but is the market big enough? In order to control animal disease the farmer needs to buy vaccines to control disease in his stock; now this is quite a small market, so is it really worth the investment? Now if the farmer had to do it in order to control disease in humans and the vaccine was appropriately priced then there may be a point, but the drug companies do not really see it as worth their while, the market is just not big enough for the sort of investment that will be necessary.

917. That is very interesting.

(*Dr Brown*) May I give an example perhaps, Mr Chairman, that I am actually a fish vet by training and I am aware that the use of vaccines to treat against furunculosis in Atlantic salmon has massively reduced the amount of antibiotic which is now used in fish farms. And in Norway, where the furunculosis vaccine was first developed, the National Veterinary Institute did the work, supported in the main by Norwegian Government money; however, there are now commercial companies selling these vaccines. And, to give you an idea, in the middle to late 1980s, Norwegian salmon farmers were using about 48 tonnes of antibiotic a year, and with the use of licensed furunculosis vaccines it is now less than 2 tonnes a year. So there are enormous benefits, if we could move in that direction.

918. But your view is there will need to be some public money put into that, to make sure the process happens in this country at a speed you would like to see it happen?

(*Professor Duffus*) Absolutely.

919. And there is a real prospect of developing some useful vaccines if that happens?

(*Professor Duffus*) Yes.

(*Dr Johnston*) I think the major message from the College is that while one focuses on the molecule the whole animal applied research is an important component, which is regularly being put to one side at the moment.

920. Now knowing you are a fish vet, Dr Brown, my last question has even more relevance. I think we took Mrs Nute's reprimand to heart, because although we have looked at milk and eggs I think it is right to say we have not looked adequately at fish issues, and I think we accept that as a criticism; so we stand rebuked. I wonder if there is anything in general terms you would like to say to us about food

[**Chairman** *Cont*]

safety issues and fish issues; you have very helpfully commented on antibiotics and vaccines, are there any other issues you would like particularly to say about the involvement of vets in disease management control in fish stocks?

(*Dr Brown*) I am delighted to be able to answer one technical question; this is actually my area. In terms of treatment of disease, of course, we have the same veterinary surgeons who are specialised in fish diseases working on our major fish farms throughout the UK; that is the same right across the European Union. When it comes to quality assurance of processed fish, in fact, the Scottish trout industry has a marketing company, Scottish Quality Trout; it is actually a veterinary surgeon who is doing all of the quality input into that. Similarly, the UK trout industry has an organisation called Trout Check, which, again, a veterinary surgeon is doing. Veterinary surgeons are acting not just as disease control experts but as production managers, production directors, looking at stocking density, and that sort of thing; so, in fact, they are involved in this whole gamut of the chain of the live animal right through to processing. And I would only endorse that you do consider putting fish into the Food Standards Agency, it is a terribly important part, and the veterinary profession is capable of helping and able to help in that area, too.

(*Mrs Nute*) It is a reflection of different cultures and different ways of preparing and cooking things, but there has been a major food safety scandal and disease problem in Germany, associated with a parasite of fish, and we have not talked about parasites at all, and do not forget parasites, particularly the zoonotic ones.

921. I know one of our witnesses recently came before us suffering from food poisoning caused by consumption of fish, so it is highly relevant. Perhaps, if we may, we could write to you with some specific questions to explore this issue in a little more detail. We have not heard much about it so far and I think it is a matter we ought to add to our agenda.

(*Dr Brown*) Yes; thank you.

Chairman: On that note, thank you very much indeed, we are very grateful to you. Thank you.

Supplementary Memorandum submitted by the Royal College of Veterinary Surgeons (C121)

1. The Royal College of Veterinary Surgeons has provided both written and oral evidence to the Agriculture Committee on the issue of food safety.

2. Following the oral evidence session on 10 February 1998, the Royal College of Veterinary Surgeons was requested to provide the Committee with further detail on the following:

THE SHORTAGE OF VETS AND THE INADEQUATE NUMBER OF TRAINING PLACES, AND NEW PROCEDURES TO MAKE GOOD THE DEFICIT

3. We enclose a brief prepared for the MAFF Minister of State, Jeff Rooker MP, on the subject of manpower and funding (see Annex A[1]). We have met with him twice to discuss the issue. Our brief for the Minister is obviously quite comprehensive and contains many statistics and background information. The key points contained in the brief are:

- There would seem to be a manpower shortage ie the UK is not producing enough veterinary surgeons, however, there is no hard evidence. In order to gain an overview of the manpower situation in the UK with a demographic breakdown, the RCVS is currently undertaking a survey of the profession. Preliminary results are expected in June 1998.
- The RCVS is registering more foreign veterinarians than producing UK veterinarians each year. There is reason for concern, as the UK is relying too heavily on overseas veterinarians to fulfil the national need.
- The RCVS is concerned about the standard of some EU veterinary surgeons. The standards of training of EU veterinarians has been ensured by the EU Directive 78/1027/EEC with a system of inspection. This system of inspection/visitation has been abandoned by the EU Commission and the Advisory Committee on Veterinary Training is virtually powerless to undertake remedial action. A brief on the EU visitations scheme was also prepared for Jeff Rooker MP and can be provided to the Committee.
- There is grave concern at the under-funding of veterinary schools. RCVS is in discussion with DfEE and the Funding Councils to attract more funding to the veterinary courses. Unlike the medical profession, the veterinary schools do not benefit from funding by its major employers (in the case of medicine, the Department of Health). This has a number of implications, both in terms of student numbers, quality of training and academic careers.

4. The RCVS is in discussion with Ministers and officials at MAFF and at DfEE in an attempt to find solutions to the problems.

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[1] Not printed.

5. A long-term solution is needed to resolve these problems.

6. The second issue on which the Committee requested further evidence concerned food safety issues in fish.

FOOD SAFETY PROBLEMS IN THE FISH INDUSTRY, INCLUDING THE PROBLEM OF PARASITES, AND THE ROLE OF VETS IN DEALING WITH THESE PROBLEMS.

7. During the oral evidence session, attention was drawn to the fact that fish, milk and egg products had been omitted.

8. The problems in relation to fish and fish products are as follows:

— Traditionally there has been little veterinary involvement in the production of farmed fish in the UK, though veterinary involvement has increased greatly over the last 15 years, coincident with the development of salmon farming. Veterinarians are more and more actively involved in most aspects of fish production including input into processing plants.

— The major anomaly with traditional agriculture (eg red and white meat) is that all statutory fish health matters are dealt with by non-veterinary personnel from MAFF in England and Wales and SOAEFD in Scotland. This therefore creates some problems with veterinary clinical control on farms.

— There is no co-ordinated approach to fish health problems compared to terrestrial farm animals. There is very little contact between the statutory authorities (SOAEFD Scotland and MAFF England & Wales) and the veterinarians involved in primary health care.

— The fact that fish are not included in the Veterinary Surgeons' Act is seen as a problem in some areas, particularly in statutory health matters.

— It is our understanding that in most EU Member States, veterinary surgeons are involved in statutory control of fish diseases and all veterinary public health aspects of fish processing.

9. There needs to be increased veterinary involvement and control in the fish sector—comparable to the red and white meat sectors.

10. Specific food safety problems are:

— Spoilage of Fish;

— Contamination of Carcases;

— Zoonotic diseases which can be passed to humans.

11. The Fish Veterinary Society have been considering a "stable to table" paper for fish and fish products in particular. The veterinary surgeon is involved through the production and processing stages (with the exception of statutory controls, as noted above). A copy of the Fish Veterinary Society paper is enclosed for your information at Annex B[1].

12. We would be pleased to provide you with further information.

2 March 1998

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HOUSE OF COMMONS SESSION 1997–98

AGRICULTURE COMMITTEE

FOOD SAFETY

MINUTES OF EVIDENCE

Tuesday 17 February 1998

BRITISH AGROCHEMICALS ASSOCIATION LTD
Mr Tim Marks, Dr Michael Clapp and Mr David Farrant

PESTICIDES SAFETY DIRECTORATE
Mr Geoff Bruce, Mr John Bainton and Dr David Martin

FRIENDS OF THE EARTH
Mr Peter Riley

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TUESDAY 17 FEBRUARY 1998

Members present:

Mr Peter Luff, in the Chair

Mr Tim Collins	Ms Sally Keeble
Mr John Hayes	Mr Austin Mitchell
Mr Alan Hurst	Mr Mark Todd

Memorandum submitted by British Agrochemicals Association Ltd (C45)

SUMMARY

1. The British Agrochemicals Association (BAA) believes that the registration system for pesticides in operation in the UK is effective, affording high levels of safety to the consumer, by considering a detailed scenario of the maximum likely intake of pesticides consumed.

2. BAA feels that there are adequate legislative safeguards to address any risk posed to food safety by pesticides during transit, as well as in storage and on farm.

3. Providing the law is adhered to, BAA believes that, under current regulation, food safety is in no way compromised by the use of pesticides during food production, storage or transit.

4. BAA believes that the measures in place to identify and evaluate any risks to humans or animals resulting from the use of genetically modified herbicide tolerant crops are sufficient to ensure continued food safety.

SECTION A

1. *Registration of pesticides*

1.1 Pesticides must be approved for use, storage, sale and supply prior to any of these activities in the UK, under the Food and Environment Protection Act 1985 (FEPA), the Control of Pesticides Regulations 1986 (COPR) and its amendments, and the Plant Protection Products Regulations 1995 and its amendments.

1.2 The evaluation is carried out by the Pesticides Safety Directorate (PSD), an executive agency of the Ministry of Agriculture, Fisheries and Food (MAFF).

1.3 BAA recognises that the evaluation process has improved in efficiency since PSD became an Executive Agency, and PSD is respected throughout Europe as one of the most effective and thorough regulatory authorities in the European Union.

1.4 BAA believes that the registration system for pesticides in the UK affords the consumer a very high level of protection, and that any resultant risk is of an acceptably low order.

2. *Safety evaluation of pesticides for registration*

2.1 Safety to the consumer of pesticide treated crops is one of the key areas considered in approving pesticides for use in agriculture and/or horticulture.

2.2 The toxic hazard of pesticides is assessed through acute, short term and chronic toxicity studies in rats and, for certain studies, also in a second species, eg mouse, rabbit or dog.

2.3 Pesticide consumer hazard is established by determining the acceptable daily intake (ADI) which is the amount of a pesticide which can be consumed daily throughout life with the practical certainty on the basis of all known facts that no harm will result.

2.4 The ADI is based on the No Observable Effect Level (NOEL) in the most susceptible animal species in chronic toxicity studies, ie the lowest dose at which no significant effect occurs in the most sensitive animal species tested, to which a safety factor of 100 is applied on the basis that man is ten times more sensitive than the most sensitive species and that the most sensitive human is ten times more sensitive than the average human. The safety factor may be increased above 100 depending on the effects observed in the chronic studies, eg formation of tumours or occurrence of defects in the unborn offspring.

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2.5 Thus a pesticide with a lowest NOEL of 25 mg/kg body weight (bw) will have an ADI of 0.25 mg/kg bw which, for an average person weighing 60 kg, will result in a maximum permissible daily intake of 15mg pesticide. For children and infants body weights of 30 and 7.5 kg respectively are used.

2.6 Consumer exposure to pesticides is established through determination of the amount of residue occurring in the harvested crop following treatment with the pesticide in accordance with Good Agricultural Practice (GAP)—maximum dose per application, maximum number of applications and shortest interval between last application and harvest in the approved label recommendations. This residue is known as the Maximum Residue Level (MRL) and must be established for all pesticide products, a statutory requirement under "The Pesticides (Maximum Residue Levels in Crops, Food and Feeding Stuffs) Regulations".

2.7 Consumer risk is evaluated using dietary intake information based on consumption data from the Office of Population, Census and Surveys which, taken together with the MRL, allows estimation of the Theoretical Maximum Daily Intake (TMDI) of a pesticide. This overestimates total pesticide consumption because it assumes that all food consumed is treated and contains the highest level of residues without loss during storage, or processing. Risk to infants and children is based on separate data and using lower body weights than for adults thus reducing the maximum permissible daily intake.

2.8 Estimation of the TMDI of pesticides for a single commodity is usually based on the 97.5th percentile consumption recorded and expressed in mg/kg bw/day.

$$\text{TMDI} = \frac{\text{Consumption [97.5}^{\text{th}}\text{ percentile] (kg/day) x MRL (mg/kg)}}{\text{Body weight (kg)}}$$

Example: The TMDI for each age group of a pesticide used on citrus fruit only with an MRL of 2mg/kg is:

Adult: (0.2656 x 2) /60 = 0.009 mg/kg bw/day
Child: (0.1659 x 2) /30 = 0.011 mg/kg bw/day
Infant: (0.0989 x 2) /7.5 = 0.026 mg/kg bw/day

2.9 Where a pesticide is used on several different food commodities summation of the TMDIs for each commodity would result in a gross overestimate. UK data suggest that adults only consume 2-5 food groups at the 97.5th percentile level and, therefore, intakes of combinations of commodities are estimated as follows:

$$\text{TMDI} = \sum \text{(2 highest 97.5th percentile intakes)} + \text{Mean intakes for other foods}$$

2.10 If normal consumption of pesticide treated produce results in a pesticide intake greater than the ADI then that food is considered unsafe under the Food Safety Act 1990. However, under normal conditions the levels of pesticides are only a fraction of the ADI and, therefore, do not pose a risk to the consumer.

3. *Monitoring of Pesticide Residues in Foodstuffs*

3.1 Surveillance of pesticide residues in food commodities is routinely carried out by the Working Party on Pesticide Residues (WPPR) and whilst detectable residues have been found in 30 per cent of all food samples analysed, less than 1 per cent have been found to be in excess of the MRL and these exceedances are generally associated with use of pesticides not in accordance with their Good Agricultural Practice.

SECTION B

1. *Pesticides and Food in Transit*

1.1 Under FEPA 1985 Code of Practice for Suppliers of Pesticides to Agriculture, Horticulture and Forestry (PB0091), there are requirements ensuring that food may not be kept in a pesticide store and that pesticides may not be transported with food.

2. *Pesticides on Farm*

2.1 The FEPA/HSWA Code of Practice for the Safe Use of Pesticides on Farms and Holdings (ISBN 0-11-242892-4) covers the safe use of pesticides on farm; this includes guidance on best practice, storage and disposal.

2.2 The primary source of information on pesticides is the product label. The text of the label is agreed as part of the registration process. Additional site/crop specific advice is available from trained agronomists; supporting advice on selected fruit and vegetable crops is available from the NFU/Retailer Partnership's ICM Protocols.

3. *Pesticides and Food Hygiene*

Pesticides are used within the food storage, processing, retail and catering industry to protect food from spoilage by insect pests and rodents. Guidance on the safe use of these products is published in the HSC Approved Code of Practice on The Safe Use of Pesticides for Non-Agricultural Purposes (ISBN 0-7176-0542-6). These specialist products are approved under the same approval system as for agricultural pesticides and the approval label is again the main source of information. Additional specialist advice in this area is available from the British Pest Control Association (BPCA).

SECTION C

1. *Genetically modified organisms and food safety*

1.1 Genetically modified herbicide tolerant crops and the food derived from them must gain regulatory approval before being marketed. We are satisfied that these procedures are appropriate and adequate in identifying and evaluating the risks to humans and animals. Herbicide tolerant crops produce food which is not significantly different to food produced by traditional seed breeding and any risk associated with their use will be of a similar magnitude.

1.2 The industry supports the labelling of food and seed and has done much to move the process forward.

20 October 1997

Examination of Witnesses

MR TIM MARKS, Consultant, DR MICHAEL CLAPP, Senior Toxicology Consultant, MR DAVID FARRANT, Registration Specialist, British Agrochemicals Association, examined.

Chairman

922. Mr Marks, I think you are leading the team today from the British Agrochemicals Association. Welcome. Thank you for your written evidence. Can I invite you to introduce yourself and your colleagues to the Committee?

(*Mr Marks*) My name is Tim Marks. I am a consultant to BAA, formerly Registration Manager at Novartis Crop Protection and, also, previously Chairman of the BAA Residue Working Group. On my left is Dr Mike Clapp from Zeneca Central Toxicology Laboratories who is an expert on toxicology of pesticides, and on my right is David Farrant from Dow AgroSciences who deals with registration issues within that company.

923. Thank you very much. I wonder if we could just begin with a general question. Could I invite you to tell us something about BAA itself, what its role is, what its membership is, what its aims are and specifically what you do in connection with food safety, how you become involved with food safety policy and roughly how much you spend, if anything, as BAA and also as constituent companies on research into the implications of food safety and pesticides in Britain?

(*Mr Marks*) BAA is the trade association of manufacturers and distributers of plant protection products in the UK, that is pesticides used in agriculture and horticulture and in the home and garden market as well. We have 40 manufacturers as members which account for 95 per cent of plant protection product production in the UK and we have 14 distributers who account for 85 per cent of sales to farmers. BAA is funded by subscriptions from members, which for 1997 is £1.79 per £1,000-worth of turnover on UK sales and 25 per cent of exports. We are a key player in providing an adequate supply of nutritious food and it is in that context that we are concerned with food safety. The use of plant protection products should not pose a hazard to the consumer.

924. Do you spend anything as an organisation on research into food safety issues?

(*Mr Marks*) Indeed we do, a considerable amount. We have to understand the toxicology of the compounds involved, as explained in the written evidence, and also to establish residues of pesticides and their metabolites which may occur in treating crops at harvest at the point they enter the market chain.

925. So that is the BAA itself doing that work?

(*Mr Marks*) The members do that work. They submit their evidence for evaluation to the PSD, the Pesticide Safety Directorate.

926. So it is individual companies who do that work?

(*Mr Marks*) Correct.

Mr Collins

927. I wonder if I could take you to the summary at the beginning of your evidence which offers a wonderfully—if you will forgive me—panglossian view of the world because it says that the registration system affords high levels of safety to the consumer, there are adequate legislative safeguards to address any risk and under current regulation food safety is in no way compromised and so forth. If that is the case, what in your view is the reason why there does seem to be evidence, not least that has been picked up by the Working Party on Pesticide Residues, of considerable consumer concern about the use of pesticides?

[**Mr Collins** *Cont*]

(*Mr Marks*) Residues may be found, but in all cases only less than one per cent of residues, over certainly the last three years, have exceeded the MRL, which is the Maximum Residue Level.

928. Is it your position that there are no problems whatsoever and that the system is entirely perfect, there are no failures anywhere?

(*Mr Marks*) The failures which are occurring I think you will find, if you look into the evidence, are due to misuse by certain individuals.

929. And your belief is that that misuse is simply because of people failing to comply with existing legislation rather than any need for tighter legislation or regulation?

(*Mr Marks*) Exactly so.

930. Could you tell us how many applications for new pesticides products are made over the year?

(*Mr Marks*) Something of the order of 14 or 15. The gentlemen from PSD who follows us will be able to give you the exact figures, that is for new active substances.

931. Why do you need to keep producing these new substances each year?

(*Mr Marks*) For a variety of reasons: firstly, they are more effective; secondly, they produce less environmental impact than those which are currently available and are generally more efficacious.

932. So there is no question of you having to produce new products because the various things you are trying to kill off with these pesticides are developing increased resistance to what used to happen?

(*Mr Marks*) That is also an issue and it can occur in plants and insects.

933. Is there not a danger that we will have a sort of "arms race" going on in which you are chasing the bugs and the bugs are resisting you and you are having to get more lethal with what you are spraying?

(*Mr Marks*) No. I think it is important that the end user has a range of materials with different modes of action with which to control the pest, whether it be insect or weed, and if they have different modes of action then the chances of resistance growing up are minimal.

Mr Mitchell

934. Let us consider the end eater rather than the end user. You seem satisfied that there is no great problem, there is a higher level of protection for food users in terms of the residues of pesticides. The Advisory Committee on Pesticides gave evidence to us which said: "It is increasingly recognised that significant variability can occur both in terms of effect, which is influenced by the age, gender and health of those affected, and exposure, that is unit to unit variation, that have important implications for assessment of risk from food contamination." In other words you cannot really be sure, can you?

(*Mr Marks*) We can be as sure as is reasonably practicable. I think it probably better that we talk a little bit about how we establish what is an acceptable daily intake and defer to my colleague Dr Clapp here.

(*Dr Clapp*) I think you have to separate the residue that can be detected and the risk of that residue causing a harmful effect. What we are doing is running a major programme of toxicology to assess the hazard in animals and extrapolate to man. We are establishing a safe dose at which we are not seeing effects in animals and then applying an additional safety margin normally of 100, i.e. ten-fold for inter-species difference and ten-fold for intra-species difference. It is against that ADI that is set that we are then measuring the risk of those residues in the food basket.

935. But there is a risk in the sense that they are saying since the human condition is so variable it might affect some people more than others. Effectively you can never be sure that the risk has been eliminated for humans.

(*Dr Clapp*) I think there is a risk to any occupation or activity that we do. Even when crossing the road there is a risk. What we have got to do is judge whether that risk is reasonable and with our regulatory colleagues apply the more stringent safety margins if we believe that is an unacceptable risk. We know that at times if we have got a more hazardous finding then additional safety margins will be applied or would be applied for children and that is something we understand based on the type of finding you have got in the toxicology package.

936. But you are saying the risk is not measured by the effects on humans but the effects on animals and then extrapolated from that.

(*Dr Clapp*) Yes. There is some work done on humans but that is mainly on the exposure level and we are in a different situation than you are with drugs where you are deliberately giving the product. We are not deliberately dosing man with those products. There is a different scenario there.

937. The residues will be haphazard, will they not, in some cases?

(*Dr Clapp*) It depends on what you call haphazard.

938. Unpredictable.

(*Dr Clapp*) There are regulations and guidelines on how to use that chemical safely.

939. There are obviously mistakes and overkill.

(*Dr Clapp*) There is always the chance of misuse and people not reading labels and following instructions, yes, but there is in anything we do, even when driving your car. You can drive it down the wrong side of the road, although you would not choose to do it and I do not think you would choose to apply agrochemicals unsafely.

940. That is true. How do you know that the codes of conduct you have got are actually being implemented?

(*Mr Marks*) The evidence of the WPPR (Working Party on Pesticide Residues), which monitors something like over 3,000 samples of food a year, would tell us that in the majority of those samples there are no detectable residues and in the remainder the residues are within the Maximum Residue Level.

941. So you monitor the residues and not the users to see that they are actually implementing the codes of practice?

(*Mr Marks*) Yes.

[**Mr Mitchell** *Cont*]

942. So it is the effect in terms of the consequences. What part has your organisation played in developing these codes of practice?

(*Mr Marks*) When they were in their development phase and, indeed, in the revision of the code of conduct on the safe use of pesticides on farms and holdings there was a consultation exercise with BAA and members made contributions to that document.

(*Mr Farrant*) A new code of practice has just come out which has been reviewed over the last two years.

943. Let us go back to the residues because the Working Party on Pesticide Residues says that one-third of all food samples tested had detectable residues of pesticides. Is that worrying?

(*Dr Clapp*) No, because I think you have got to look at the other side of the equation which is is that level of residue likely to cause any risk? You apply different pesticides in different quantities and the toxicology is different, the safe dose is different. That is why we establish, working through the regulators, the acceptable daily intakes on an international basis.

944. But whatever the levels of the risk, does that suggest that self-regulation to eliminate residues is not working properly?

(*Dr Clapp*) It depends on whether you believe you have to eliminate total residues of everything to have a safe environment or not.

945. And you do not think you do?

(*Dr Clapp*) No. I think you should look at the risk equation and make the judgment on that.

Ms Keeble

946. You mentioned just now the possibility of eliminating residues to get a safe environment. We are obviously looking particularly at food safety. Are there separate arguments about eliminating the use of chemicals for food safety as opposed to other environmental issues?

(*Dr Clapp*) There are different types of exposure you have to look at, not only the one for a residue on food. You should balance your environment of looking at water and food and you have got to look at your operating manufacturer and general population and we do risk assessments in all these areas.

947. We know about the risk of chemicals to employees' safety. There has been quite a lot of publicity about that. How about the risk of pollution of water supplies, is that a serious risk?

(*Dr Clapp*) I have not got the information.

(*Mr Marks*) It is an aspect which is investigated during the development of a new active substance for use as a pesticide.

948. But that has not emerged yet as a safety issue, has it, the issue of chemicals which are sprayed on crops getting into the water supply?

(*Mr Marks*) Indeed they can and have done in the past and as you maybe know, there is an arbitrary limit of the current pesticides in drinking water and that is that pesticides may not exceed 0.1 mg per litre which is 1.0 part per billion for any pesticide in drinking water.

949. Are you involved in any testing of that or is that left to the water companies?

(*Mr Marks*) We are involved in the testing and the establishment of whether movement of that pesticide can occur to water. The monitoring of the occurrence of pesticides in water supplies is undertaken by the water supply companies.

950. You deal with agrochemicals generally and most of the discussion that we have had thus far has been about pesticides. Is that right? Should we look solely at pesticides or should we look at other chemicals that are used on crops for different purposes? I am just asking because I do not know.

(*Mr Marks*) In relation to what?

951. In relation to food safety.

(*Mr Marks*) I am not really competent to speak about things other than pesticides. That is my business and that is what I know about.

952. In terms of the checks that you have done, you found that 30 per cent of the things that were tested had evidence of residues. Something like one per cent of those were in excess of the Maximum Residue Level. Could you say which produce that one per cent was found on? Was it scattered or was it one particular type of produce?

(*Mr Marks*) It is scattered, but there tends to be quite an incidence of fungicide residues in lettuce.

953. Imported or home grown?

(*Mr Marks*) Home grown.

954. Have MRLs been set for all produce or not?

(*Mr Marks*) Yes, they have. It is a requirement of the registration or authorisation process that an MRL is established when it is notified for approval.

Mr Todd

955. Could you compare the levels of pesticides permitted in water with those permitted in the various foodstuffs which you have to have a licence for. My impression is that the levels permitted in water are very significantly lower than those for foodstuffs. Is that not right?

(*Dr Clapp*) What has tended to happen is you go to a standard level irrespective of the hazard of the product in water, whereas in foodstuffs you are setting the MRL and comparing it with the safe dose and making sure that you do not have a hazard in that respect. So it is variable in foodstuffs depending on the hazard of the chemical. It is just a standard blanket level in drinking water.

956. That did not quite answer my question. My impression was that in all cases the water level was set lower than those for foodstuffs. Is that not right?

(*Mr Marks*) It is not right. As my colleague said, it is not a science-based threshold value which is set for pesticides in water. It is an arbitrary value on the basis that pesticides have no place in drinking water, that is the argument, therefore a limit was set at 1.0 ppb.

957. You said that people have said that there should be no place for pesticides in drinking water. Would it alarm you if people reached the same judgment about foodstuffs?

[**Mr Todd** *Cont*]

(*Mr Marks*) We do not think it is appropriate. We think it is appropriate that the thing should be based on scientific evidence and what is the hazard arising from the residue, which is where the acceptable daily intake argument arises which Dr Clapp referred to earlier on.

958. So you are implicitly criticising the level set in water?
(*Mr Marks*) Yes.

959. Which you would judge to be scientifically groundless?
(*Mr Marks*) Correct.
(*Mr Farrant*) We understand that the level in water was set at the lowest analytical level that could be achieved at the time as a standard.

960. So basically they wanted it to be zero, but since you have to prove it they set it at the lowest detectable level?
(*Mr Farrant*) And it takes no consideration of the safety of the product.

961. There is an argument for saying that if you think that zero is the appropriate level in water then it should be the same in foodstuffs. There is an argument for saying that, is there not?
(*Mr Farrant*) Yes, but you can only qualify it by level of detection and analytical methodology, refinement.

Chairman

962. I am a practical man and we are talking in scientific terms at present. I thought I had to wash my fresh foot and vegetables to make sure there were no residues on them. Is that right or not?
(*Mr Marks*) Washing them may remove surface residues, but residues are not only on the surface, they are in the plant as well. Washing is a matter of good hygiene, removing dirt and miscellaneous bugs which may still be adhering to the crop you are about to consume.

Ms Keeble

963. Does your test for the MRL just look at the surface residues or does that analyse the level of the pest residues inside the produce?
(*Mr Farrant*) The standard residue information that we would have to supply to the regulators on apples is evidence of residue on the peel and residue in the pulp. So it is the total residue picture that we have to supply to get a registration.

964. Could you say what percentage of the residue is on the outside and what percentage will tend to be in the body of the plant?
(*Mr Farrant*) It is very difficult because a lot will depend on the nature of the product. In general cases when people wash or peel potatoes or apples then most of the residue would be removed.

Chairman

965. Do you have any views about the incidence of pesticide residues on imported products compared with domestic products? Is there any pattern you could show to the Committee on levels of residue?
(*Mr Marks*) No, I cannot really comment on it. It is really up to the importer to ensure that the food he imports is of a marketable quality and he has an obligation under the Food Safety Act to ensure that that is so.
(*Mr Farrant*) Can I just add to that that the Working Party on Pesticide Residue's report each year does target both home produced food and imported food and over the last three or four years they have particularly targeted imported food from certain areas because of concerns they may have had.

Mr Mitchell

966. But the agrochemicals industry is pretty international, is it not, so is it likely the standards will be the same in other countries for which we import food?
(*Mr Farrant*) I think generally—because we now have a European registration system—standards within Europe are fairly universal but I would not like to say that standards outside Europe are perhaps not quite as good.

Ms Keeble

967. In which countries are the things being specifically tested on? You mention that some particular produce from countries was being put under greater scrutiny.
(*Mr Farrant*) I think if you look in the pesticide residue report you will see that they have targeted particular areas for things like citrus from areas of Spain and perhaps Italy, but in their 3,500 samples they do a year they do target specific areas of concern.

968. If it is a citrus fruit then you cannot be talking about surface residues because people would not eat them. Presumably it is the residues in the pulp, is that right?
(*Mr Farrant*) Yes, that is true, but, equally, people have to handle citrus so you would have to consider the handling aspect as well.

969. Is that a risk generally?
(*Mr Farrant*) No, because again as part of the residue submission that we have to make we have to consider what might be on the peel and what might be on the pulp with regard to consumption or handling.

Chairman

970. Are different types of pesticides responding in different ways? Are some more likely to be incorporated into the product itself and others more likely to be cleansed by washing?
(*Mr Farrant*) Yes.

971. Can you give us some examples?
(*Mr Marks*) Dithio carbamates, which are protective materials, sit on the surface of the plant or the crop, whereas something like a triazole fungicide would move into the crop and you would find the residue within it rather than sitting on the surface.

Ms Keeble

972. Is there any reason why pesticides have to be used to go into the pulp or into the inside of the plant? Presumably those are much harder to deal with, particularly if you are dealing with something like citrus fruit where it then finds its way into the juice and things like that.

(*Mr Farrant*) A lot depends on the nature of the disease you might be needing to control because some plant diseases are quite deep-seated within the plant and if you had a product that purely went on the outside of the plant you would not get any control of it, you would need a product that would move into the plant to be able to control that.

973. Is that always the case or could you recommend some kind of substitution so that you could gradually move towards pesticides where the residues could be dealt with?

(*Mr Farrant*) You can argue it both ways. As we mentioned just now, dithio carbamates are used as protective products, so you would spray on a regular programme to stop the disease coming in. You might on certain crops like apples spray ten, 12, 14 times a year, whereas with a product that would control the disease once it got into the plant you might only need to apply it two or three times.

Mr Todd

974. Can you define what Maximum Residue Level actually means?

(*Mr Marks*) It is the amount of residue occurring on the harvested crop when the maximum dose per application and the maximum number of applications have been applied and the crop is harvested at the shortest recommended interval after the last application.

975. As it is implied in your paper that one per cent of foodstuffs tested exceeded that level.

(*Mr Marks*) Of the order of one per cent over the last three years.

976. What are the health implications of exceeding the MRL?

(*Mr Marks*) It is a matter of how far it has been exceeded, but it is probably very minimal because a substantial safety factor is applied in establishing the relationship between the MRL and the ADI that is—

977. Obviously it depends on how often you eat the stuff.

(*Mr Marks*) Yes.

978. So if you eat lettuce all the time, and you mentioned that lettuces are often exceeding the MRL, and if you do not wash them—

(*Dr Clapp*) And only ate lettuce and nothing else, because you have got to consider your diet.

979. So bad news for rabbits!

(*Dr Clapp*) It would not be bad news because you would feed the rabbit a balanced diet! You would not feed the rabbit totally on lettuce otherwise it would be ill.

(*Mr Farrant*) I think a critical point to remember is that the Maximum Residue Level is not a safety level, it is just a measurement.

980. That is what I am trying to get out of you.

(*Mr Farrant*) It is not a safety level, it is a measurement that is made on the actual residue that might occur on produce leaving the field.

(*Dr Clapp*) You have then got to calculate a theoretical maximum daily intake which is looking at your food basket that you are going to consume in that day and using the MRLs in that food basket to estimate the exposure and there is quite a big dilution in that and, also, you will make assumptions—

981. So you are unconcerned about one per cent excess of MRL because you reckon they are eating a lot of other things too and obviously those particular instances are rare. Is that what your argument is?

(*Dr Clapp*) I think you are unconcerned from a risk point of view because over and above that you are comparing the theoretical maximum daily intake with the ADI which also has a safety factor in it. So there are a number of safety factors in that calculation before you could get to what we would regard as risk levels.

(*Mr Farrant*) I think we are concerned about anything that goes over the Maximum Residue Level because by the way it is calculated nothing should be above the Maximum Residue Level because it is the highest figure that we have ever found from what the normal practice is. So if a figure is above the maximum level it means that something has been done incorrectly.

982. Which human beings do, do they not?

(*Mr Farrant*) Which they do, and that is why we build in a huge safety margin level between the Maximum Residue Level and what might be of concern.

983. Do you publish what might be of concern?

(*Mr Farrant*) In terms of what?

984. You said there is a margin between your MRL and what might be of concern.

(*Mr Farrant*) With any new product that either goes through PSD or is now reviewed by PSD, the data on that product is produced in what is called an Evaluation Document that is available to any member of the public and that goes through all the toxicology, all the environmental fate and behaviour, all the residues, everything and actually spells out all the figures involved and that is freely available.

(*Dr Clapp*) We would not be able to proceed if something was considered through the regulatory review to be of concern to the public. We would be stopped from marketing on that crop in that situation.

Mr Hurst

985. Gentlemen, the Food Standards Agency White Paper has proposed that the Pesticides Safety Directorate remains with the Ministry of Agriculture. What would your own view be on that?

(*Mr Marks*) We are quite content for that arrangement to continue. We consider the PSD to be a particularly efficient body especially since it has been an Executive Agency of MAFF and we have seen tremendous strides made and we feel it is doing a very good job in acting in the consumer interest.

[**Mr Hurst** *Cont*]

986. I see the point, but you will appreciate from the questions here today that there are concerns in the public mind at least that there is a connection between the risk to health and pesticides. In light of that fear, whether it is substantiated or not, would it not be more appropriate for this to be with the Food Standards Agency?

(*Mr Farrant*) I think the concern we had was that PSD might be split up. If we go back four or five years, we had a very big problem in getting products registered in the UK because of the delays within PSD, as it was at the time. I think the thing we feel now is that dramatic strides have been made in the last four or five years not only within PSD but also in PSD's contact with a new European Registration Directive which is basically ruling all our registrations now. They have taken the lead, along with Germany, in getting that new Registration Directive up and running and as a result we would consider, certainly from a global company like mine, the UK as being one of the foremost regulatory authorities in the world because of the strides they have made in the last four or five years. Our concern was that PSD might be split up under the proposed new agency.

(*Mr Marks*) In answer to your question, though, if it is considered that it is seen to be a palsy-walsy act going on between PSD and MAFF as the producing agency and PSD as the regulating agency then we would not be averse to seeing PSD transferred to another department, let us say the Department of Health, but we would not like to see it dismantled for the reasons that my colleague has just outlined.

987. You would not oppose it going wholesale to another department. It is just a splitting of the direction between the departments you are against, is it?

(*Mr Marks*) That is right.

Chairman

988. You say in your memorandum to us that "the PSD has improved in efficiency since it became an Effective Agency". That means it must have had deficiencies before it was an Executive Agency. How has it improved?

(*Mr Marks*) They have set themselves targets and objectives which have to be adhered to and the setting of those targets and objectives seems to have borne considerable fruit. Nine years ago a new active ingredient was taking five years to get authorised. Today it will take you 18 to 20 months. It is a considerable saving for the industry and also allows the new active ingredients to be available to the user much sooner than they might otherwise be.

989. And you say that the organisation is respected throughout Europe. Have you got any evidence for that very encouraging and welcome claim?

(*Mr Farrant*) I think the fact that the European Union appointed the UK and Germany to front the new discussions and organise the discussions on new pesticides on behalf of the Community describes the value of both the UK and Germany.

990. Can I just move on to one other subject area which is of some concern to me and that is Genetically Modified Organisms which you mentioned in your memorandum and I am very grateful to you for the memorandum. Some of your members presumably are involved in the development of GMOs but for other members they are something of a threat to their livelihoods, are they not? What view do you take of the role of GMOs compared with pesticides in controlling pests?

(*Mr Farrant*) I think most companies now understand that in the future we cannot carry on growing or developing our food source using the current practice of using pesticides as such. We are running out of land. We cannot really get more yields, particularly from cereals, than we are getting now and so the next major development has got to be Genetically Modified Organisms.

Mr Mitchell

991. That is to increase production.

(*Mr Farrant*) Yes, to manage to feed the world. It is something that is going to be the next big stride in development. You are right in that the first ones being proposed at the moment will affect the industry because they will affect the use of herbicides on the crops that are being developed. There are a lot of other developments going on in terms of GMOs where they are looking at modifying the quality of oil that a crop can produce or getting it to produce more oil per unit area and that would mean that there would not be any change in the way that you would look after the crop in terms of pesticide usage. So, yes, it is a threat but it is also a potentially big benefit.

Chairman

992. Your company, Dr Clapp, is involved on both sides of the equation.

(*Dr Clapp*) Yes.

993. Is it your view as an Association that GMOs pose no threat to human health? The environmental issues we might deal with separately, but the food safety aspects in GMOs do not cause you any sleepless nights, do they?

(*Mr Marks*) No.

(*Dr Clapp*) I think you have to do some assessment of them, but provided you meet that and demonstrate there are no differences chemically in residues, etcetera, then there is no reason why they should pose a threat.

(*Mr Farrant*) We feel that the current standards being applied within Europe to get GMOs registered are, what we would consider to be, as stringent as for agricultural chemical products.

994. But you do support the idea of labelling to inform consumers?

(*Mr Farrant*) Yes, I think consumers should have a choice.

Ms Keeble

995. In your written evidence and also from what you have said this morning, you seem fairly clear we have very stringent controls and that by and large where there are problems these are not at a level at which there is a risk to food safety. Yet there is still quite a public concern about the use of agrochemicals

[**Ms Keeble** *Cont*]

in food stuffs, as seen I suppose by the increase in demand for organic food and also of course to the concern that is associated with the use of organophosphates and lindane. To what do you attribute the gap in consumer confidence and how do you think it can best be resolved, because clearly there is a difference between what a lot of the public think and what you are saying?

(*Mr Marks*) We would agree the public perception of pesticides is not all we would wish, despite the considerable activity by the British Agrochemicals Association in trying to publicise the need and the risks which exist from such use. There is also a considerable amount of information available to the public should they wish to avail themselves of it, but that does not seem to be being done through the disclosure documents and so on. To that extent, we would welcome the Food Safety Agency coming in to speak on behalf of the use of pesticides, if you like, to assure the public that pesticide-treated crops are indeed safe.

996. Do you not think the Food Safety Agency has to be a consumer champion rather than an industry-specific one?

(*Mr Marks*) Yes, but if it has its representatives in the ACP and also as assessors for the ACP, then it is acting on the consumers' behalf at that point and can indeed prevent the authorisation of problem pesticides.

Chairman

997. What is happening to your members' sales, Mr Marks? Are they going up?

(*Mr Marks*) Yes.

998. The ACP said in its annual report that 10 per cent more farmers were using pesticides than in the previous survey, and that was 1996 compared to 1994-95. Why is that happening? Are there more bugs around? What is happening?

(*Mr Marks*) I think the problem is that farmers have to get maximum production from the land they are farming, to maximise their income.

Chairman: Thank you very much. I think that concludes our questioning. We are very grateful to you for your time and trouble.

Memorandum submitted by the Pesticides Safety Directorate (C91)

PURPOSE OF MEMORANDUM

1. This Memorandum outlines the regulatory system applied to pesticides and describes the work of the Pesticides Safety Directorate. It draws out the Agency's food safety functions, in the context of the White Paper "The Food Standards Agency: A Force For Change".

THE REGULATION OF AGRICULTURAL PESTICIDES

2. The regulatory system is outlined in paragraphs 9.1 to 9.5 of the Memorandum of Evidence submitted by MAFF and by paragraph 4.23 of the White Paper. Paragraphs 3 to 15 below give further information on the arrangements in place.

THE APPROVALS SYSTEM

3. Pesticides are tightly regulated in the UK. A pesticide may only be sold, supplied, stored, advertised or used if this is in accordance with an approval. Applications for approval must be supported by detailed scientific evidence covering the issues of risk to human health and to the environment. The data provided by companies are then subject to rigorous evaluation to enable a thorough assessment to be made of the risk posed by the product in use. The approvals system is administered by PSD (for agricultural pesticides) and the Health and Safety Executive (HSE) (for non-agricultural pesticides).

4. The approvals process requires a wide range of issues to be assessed including:

- the safety of pesticide users, food consumers and bystanders;
- the protection of the environment; and
- efficacy, covering both the effectiveness of the pesticide in controlling the target pest and the possibility of undesirable side-effects on treated crops.

5. These issues cannot in practice be neatly separated; there are clear areas of overlap. An understanding of a pesticide's basic toxicology is fundamental to the assessment of all aspects of human safety, whether the potential exposure route is through food consumption or by some other route. Assessment of the pesticide's efficacy aids the establishment of "Good Agricultural Practice" (GAP)—consistent with safe use and the control of target pests or diseases. GAP is reflected in the conditions attached to a product's approval and Maximum Residues Levels (MRLs) indicate the maximum residue that may be left in a given crop when a pesticide is used according to Good Agricultural Practice.

THE ADVISORY COMMITTEE ON PESTICIDES

6. The Advisory Committee on Pesticides (ACP) (which submitted its own evidence to the Select Committee's Inquiry in October) is established under the Food and Environment Protection Act 1985 and the Government is required to consult it on all aspects of the UK's regulatory system. The Committee consists of 14 Members each chosen for their independence from both Government and the agrochemicals industry and for their possession of technical expertise of value to the Committee's scientific assessment of risk to people and to the environment.

THE ROLE OF DEPARTMENTS

7. Because of the wide range of issues relating to the approvals process, five Departments are involved in Great Britain: MAFF; the Department of Health; the Department of the Environment, Transport and the Regions (and HSE); the Scottish Office; and the Welsh Office.

8. All Departments are closely involved at all stages of the process. Departmental experts are consulted day-to-day on technical issues. An Inter-Departmental Secretariat (IDS), comprising officials from each of the Departments (including HSE) was established in 1996. This body prepares the agenda for the Advisory Committee by identifying where the Committee's guidance is needed on new issues and where Departments can decide the matter on the basis of the ACP's previous advice. Certain matters, such as the first approval of a new pesticide chemical, are always referred to the ACP.

9. Where issues reach the IDS or ACP, a final decision requires the agreement of all Departments and so a consensus has to be found. In the case of the ACP, each Department has an "Assessor" responsible for considering the Committee's recommendations and agreeing to or rejecting them on behalf of the Department. Approvals below the level of the IDS, for example the approval of a pesticide essentially identical to one already on the market, require the agreement of MAFF and DETR.

MONITORING ARRANGEMENTS

10. As explained in the MAFF Memorandum, the approval arrangements are supported by substantial monitoring programmes. The Health and Safety Executive operate the monitoring arrangements for human incidents. PSD operates the monitoring systems for pesticide usage, wildlife incidents and pesticide residues.

11. The monitoring of pesticides residues in foodstuffs is intended to check that no unexpected residues are occuring, that residues do not exceed statutory Maximum Residue Levels (MRLs) and that dietary intake of pesticide residues is at acceptable levels. Several thousand samples are analysed each year (70 to 80,000 individual analyses) and the programme budget for 1997–98 is £1.6 million. Of this, 60 per cent, or about £1 million, is met through charges on industry. The split between Government and industry funding reflects the broad balance of surveys between those looking at domestically-produced food and those concerned with imported foods.

12. The surveillance programme finds that pesticide residues are virtually all within the relevant MRLs and rarely raise any concern for consumer health. However, they may, on occasion, indicate misuse of pesticides and further surveillance work is carried out where this appears to be the case. Where continuing problems are found, enforcement action is taken. Where appropriate, cases are taken to Court and growers have been successfully prosecuted for misuse of pesticides.

DEVELOPMENT OF THE EC REGIME

13. An EC system for the regulation of plant protection products—essentially the agricultural pesticides which PSD regulates under the UK arrangements—is gradually being phased in under Council Directive 91/414. The EC system is aimed, like the UK arrangements, at the protection of people and the environment and the assurance of product efficacy; both systems are based on rigorous scientific assessment.

14. Under the EC arrangements, the Community will reach collective decisions as to whether or not particular pesticide chemicals may be authorised on the basis of an evaluation by a Member State. Products containing those substances will be assessed nationally on the basis of common rules known as "Uniform Principles". The Directive will only gradually, however, take over from the UK arrangements. This is because each existing pesticide chemical must be reviewed by the Community before it becomes fully subject to the EC arrangements.

15. The EC arrangements are ambitious and the work that is required to review the 850 or so existing chemicals is substantial. With its breadth and depth of scientific expertise and experience of running a similar science-based regulatory system, PSD has been at the forefront of developing the EC system and acts as the UK competent authority responsible to Ministers in five Departments.

The Role of the Pesticides Safety Directorate

16. As well as its role in the approvals and monitoring systems described above, PSD carries out a range of functions that may be of interest to the Committee. Following a description of the scale of the Agency's operations in paragraphs 17 and 18, these other functions are detailed in paragraphs 19 to 23.

17. In total, PSD has 198 staff in post. The Agency's planned expenditure for 1997–98 is £11.9 million (including the monitoring schemes mentioned above but excluding the Research and Development budget which PSD manages on behalf of MAFF). Matching income is obtained from MAFF (£5.2 million) and from the agrochemicals industry (£6.7 million). PSD has made great efforts to maximise its cost-efficiency; fees have been held down and the levy, as a percentage of industry turnover, has been reduced for four consecutive years.

18. It is not possible to divide PSD's staff precisely between food safety and other roles as the Agency's work does not neatly divide in this way. However, we estimate that approximately 25 staff years will be devoted to food safety aspects of PSD's work in 1997–98.

R&D

19. PSD advises MAFF on policy relating to the Research and Development (R&D) programme on pests and pesticides. Projects are funded from MAFF's R&D budget (not from PSD's income) and are managed jointly by PSD and MAFF's Science Group. Current projects relating to food safety include work on assessing the effect of different pesticide application regimes on residues; the potential of adjuvants (products added to pesticides) to affect residue levels, and the effects of domestic processing on residue levels at the point of consumption.

20. To set the food safety-related work in context, the total pests and pesticides programme budget for 1997–98 is about £8.4 million, of which the element relating to food safety (including monitoring) is about £1.1 million.

Provision of Information to the Public

21. PSD considers it of crucial importance to provide the public with as much information about pesticides as possible. Documents detailing the evaluation of pesticide chemicals are published and the scientific data underlying these evaluations are available for inspection. The Advisory Committee on Pesticides and its Working Party on Pesticide Residues each produce an Annual Report detailing the work carried out during the year. Press Notices, News Updates and briefing notes highlight major current issues. A dedicated Information Section handles enquiries from the public and from other sources.

22. However, some limitations on the availability of information arise from the need for confidentiality in three areas. Personal information (for example medical records which may be included with company data) is not released and neither are details of the addresses of individuals or sites. Commercially significant data also needs to be protected from the risk that the intellectual property of one company could be used to the advantage of another. To this end, details of the manufacturing process for chemicals and products are considered confidential. Other data are available for inspection but copies are not provided to avoid the risk that they could be used by another company to support its own applications for pesticide approval.

23. The Government supports the Pesticides Bill brought forward by Ben Bradshaw MP, which would allow the public access to information on pesticide chemicals evaluated before 1986 (which are not covered by the present legislation).

The Government's Proposals for the Food Standards Agency

24. Paragraph 4.25 of the White Paper explains the basis for the Government's view that PSD should remain the lead operational authority for agricultural pesticide authorisations. Paragraphs 4.29 to 4.32 explain how the Food Standards Agency is intended to have a major input into PSD's work. In particular the Agency will:

- provide an Assessor to the ACP, giving it an effective veto on approval decisions;
- nominate a Member to the ACP and be consulted on the Committee's membership as a whole;
- provide a member of PSD's Ownership Board;
- have a strong input into PSD's residue surveillance work and have powers to carry out its own surveillance; and
- be consulted on public health implications of PSD's policy advice and advise on international discussions on food implications of pesticide use.

25. As explained above, PSD is well used to operating on behalf of a number of Departments, each with an effective veto over major decisions and each with their own particular expertise and viewpoints. PSD is therefore confident that it could work closely and effectively with a Food Standards Agency established to make an input at all points of the system from the evaluation of data through the Advisory Committee to Ministerial decisions. We look forward to establishing this working relationship.

6 February 1998

Examination of Witnesses

MR GEOFF BRUCE, Chief Executive, MR JOHN BAINTON, Director of Policy and DR DAVID MARTIN, Director of Approvals, Pesticides Safety Directorate, examined.

Chairman

999. Mr Bruce, welcome to the Committee. Thank you for your written memorandum. Can I ask you to begin by introducing your colleagues and yourself?

(*Mr Bruce*) Thank you, Chairman. If I may introduce first of all on my left, Dr David Martin, who is the Director of Approvals for the Pesticides Safety Directorate. On my right is John Bainton, who is Director of Policy for the Pesticides Safety Directorate. I am Geoff Bruce, the Chief Executive of the Directorate.

1000. Thank you very much. In your memorandum you outline the approvals procedure which you implement and which you operate at present, and that refers to a thorough assessment being made of the risk posed by new pesticide products. Precisely what risk assessment procedures are you referring to?

(*Mr Bruce*) We do take an extremely wide view of our responsibilities because we recognise that pesticides can have an impact on humans and on the environment—ground and water—and we are determined to ensure that the totality of our examination looks at all these aspects. We are looking to see the product actually works, because there is no point in approving something which will be allowed into the system if it does not actually do the job. So our evaluation system is looking at the effectiveness of the product, does it work or not; it is looking at its toxicity; it is looking at its environmental impact, and it is looking at the general impact on water and other associated features. So it is intended to be a very comprehensive look at all the possible impacts. If you would like further detail, Dr Martin would be happy to follow on.

1001. I think it would be helpful.

(*Dr Martin*) As Mr Bruce has said, we are concerned with looking at a wide range of issues. We carry out risk assessment with respect to those people who use pesticides, those who may consume treated produce and to the impact on the wider environment. These risk assessments are based upon the fact that risk is a function of both the hazard which is presented by a particular compound and also the exposure that will occur in the various components that we have identified. In order to illustrate in general terms the kind of procedures we go through, I would refer to the various steps we take when carrying out a consumer risk assessment. This starts with identification of the hazard associated with the particular pesticide we are considering. These are the intrinsic properties of that particular component and are derived from a consideration of the toxicological data that the applicant company provides in support of its application. We consider this information in respect of both the active substance itself and the formulated product. As a result of that consideration, which considers a wide range of toxicological end points, we can identify a level which causes no adverse effects in the test species. As the BAA have already indicated, a safety factor is then applied to this no observed adverse effect level and that is used to derive the acceptable daily intake, which is the amount of the chemical which can be consumed every day of an individual's entire lifespan in the practical certainty, on the basis of all known facts, that no harm will result. This provides the benchmark against which we would assess the exposure part of the equation. These procedures are accepted on an international basis and in fact the World Health Organisation and the Food and Agricultural Organisation of the United Nations do carry out joint meetings on pesticides at which they look at this toxicological data base on an international basis and make recommendations in respect of acceptable daily intakes for a number of chemicals. The assessment of consumer exposure to pesticide residues requires consideration both of the nature and level of the residues which are likely to occur as a result of the use of a particular pesticide and also of the amount of treated produce that an individual is likely to consume. Information on the nature and level of residues is determined from information provided via supervised trials where known amounts of the pesticide are applied and then samples are taken at subsequent intervals for analysis. This enables us to identify the magnitude and nature of the residue which would be present in that crop at the time it is harvested. This information is combined with information on patterns of dietary consumption to provide national estimated daily intakes of various food commodities for adults, children and infants. It is this estimate which is then compared back to the acceptable daily intake which has been derived from the toxicological data, and only where this comparison shows the estimated intake is less than the acceptable daily intake will approval for that use be granted.

1002. Thank you for that. Can I ask a question about the safety factor which is 100? It seems a trifle arbitrary, rather neat and round, is it an internationally accepted safety factor?

(*Dr Martin*) This is something which has been around for a very long time indeed. It is well established internationally. There are two parts to that particular safety factor, one to allow for intra-species variations such as for extrapolation from

[**Chairman** *Cont*]

experiments on animals to man, and the second factor is for variation within the human species. There are situations, depending upon the extent of the toxicological data base available, where either smaller or indeed larger safety factors may be considered relevant in determining what the acceptable daily intake should be for a particular compound.

1003. A technical question as well, if I may, you seem to suggest that these exercises are done on a compound-by-compound basis but presumably some compounds can interact with other compounds to have other consequences. Do you take account of that in your approval procedures?

(*Dr Martin*) Not at that stage of the exercise. We are looking at these compounds individually. In many cases compounds will have similar modes of actions and similar end points—where they are if you like competitors in the market rather than having a wider range of applications.

1004. So there is no problem as far as you are concerned about two compounds interacting when applied to a particular crop?

(*Dr Martin*) As long as the assessment for the individual compound comes out within what we would regard as being acceptable, given the assumptions which have been made and given the safety factors which have been applied, we would be content with that situation.

1005. How many products do you approve annually? Is it 14 or 15?

(*Dr Martin*) Something of the order of 14 or 15 new active substances are approved each year, and in addition to that we are looking at the approval of in the order of 200 to 250 new products containing existing active substances, and probably in excess of another 1,000 applications involving modifications to existing approvals.

1006. Annually?

(*Dr Martin*) Yes, annually.

1007. 1,000 applications annually to modify existing products to be used in a different way?

(*Dr Martin*) Yes.

1008. We heard a rather optimistic view from the BAA about why new applications are necessary, essentially because they are desperate to find the pesticides which are less intrusive and destructive to the environment. They did not go along with Mr Collins' view that we are engaged in some kind of arms race with the bugs. What is your judgment about the number of new products? Arms race or environmentally friendly?

(*Mr Bruce*) I think, Chairman, that the new products which come along are generally more specific in their action, they are more environmentally friendly and they are part of a natural development of the chemistry and of our understanding of the area that we are trying to control. So I believe that what comes along is generally more environmentally friendly, more specific and therefore worth its place in the queue, because some will fall off as they become commercially unattractive. It provides a wide range of choice for the operator, for the purchaser, and it deals with the crop in a more sensitive way.

1009. So you would say that typically most of the new products you are asked to approve are actually there because they are trying to find better way of dealing with the problem and are less environmentally intrusive?

(*Mr Bruce*) Yes, indeed.

1010. Why do you have to go through such elaborate procedures to approve products which are composed of active compounds which have already been approved?

(*Mr Bruce*) Chairman, I would not want to give you the impression that exactly the same period of time is given to a change, if you like. If you look at a new active ingredient, completely new to the market, as the BAA said that will take 12 to 18 months to take through the system. If we know the chemistry and it is a recognised product, but if they want to change it in some way (for instance they want to go to a new crop), then most of the analysis and the examination has been done and our understanding is very complete, so what we are looking at is the new dimension which may take only three or four months. That is a different category in our terms and it does not require as much time.

1011. Just for the record, Mr Bruce, I think your figures for new product approval were slightly different from the BAA's. What would be the minimum and maximum time for product approval?

(*Mr Bruce*) If you are looking at a new active ingredient, Chairman, I would say 18 months is about the shortest period, because we take the exercise in two stages. We start by receiving a large volume of documentation from the company and it is a massive bundle. If you imagine, say, ten photocopier boxes filled with data, that is what we start with, and that is eventually reduced to something about 1 inch thick, which is then publicly available, so a lot of work goes on between photocopier boxes and that document. That is what we call the sifting process, while we ensure what is in these boxes actually meets our requirements. Then the clock starts and runs for about 12 months while that evaluation takes place. The material and the advice then goes to the Advisory Committee on Pesticides who will then decide to recommend or not to recommend to ministers that that should be approved. So I would say at the shortest, Chairman, 18 months, longer if there are problems which need to be resolved.

1012. To what extent do you rely on the data you get from the manufacturers and to what extent do you double-check it with your own scientific resources?

(*Mr Bruce*) We take what we are given from the manufacturers. That is the bundle. We apply against that the depth of regulatory knowledge that we have, because as you will appreciate within the family of pesticides there are many common traits. If you are looking at mammalian toxicology, what you are looking at is informed by a great depth of professional expertise, so we apply our own tests and standards but we are taking the material which has come from the company in that large dossier I have described.

Mr Collins

1013. Building on that, what would be the penalties if information supplied to you was proved to be inaccurate?

(*Mr Bruce*) We would need to see in what respect and how serious that was. It would be very foolish, if I may suggest, to put such material in because that is an unsure foundation on which to build a reputation or a marketing effort. So I think the companies themselves are responsible in the way they approach this task. We, of course, have our own stocks of knowledge and can detect whether something is fraudulent or not. There is also, as you are probably well aware, something called Good Laboratory Practice, which are recognised protocols which are overseen by the Department of Health and these ensure that if something is produced to GLP standard we can rely upon it. I have to say, and Dr Martin will correct me if I am wrong, we find very little which could be regarded as suspect information. We are satisfied with what we get. Is that right?

(*Dr Martin*) Indeed it is, yes.

1014. We heard earlier it used to take you five years to approve these new active ingredients, it now takes about 18 months, can you assure us that this means you are being more efficient, you are not cutting out any stages of the tests or approvals?

(*Mr Bruce*) I can give you a whole-hearted assurance on that. The reason it took so long in the past was there was a log-jam in the system, and it is not that we have shrunk the process to get the time from five years to 18 months, it is because we have got the log-jam out of the system and we are dealing with applications now as they come in, giving them prompt and crisp attention and an outcome comes. There may not always be an approval, sometimes they are rejected, but it is being done on a much crisper basis than it was before.

1015. Finally on this, we heard earlier exceedingly warm words about you from one of your client groups, but of course as a regulatory body you are not by any means solely answerable to the BAA, your role is to look after the consumer at least if not more so. Would you expect to have equally warm words from consumer groups and, if not, do you think there might be a problem?

(*Mr Bruce*) You are asking me to look into a crystal ball, but we do take very seriously our total stakeholder interest. We are not an arm of the BAA or any other manufacturing body. An example, if I may you give you one, of the central role we try to play in developing understanding is that a couple of years ago I chaired a conference on the responsible use of pesticides out of which flowed the Pesticides Forum. The Forum is a gathering which incorporates those who make agrochemicals, those who use agrochemicals, consumers, environmental interests and so on. We are very conscious that there is a wide stakeholder list and we try to respond to all of their needs and concerns.

(*Mr Bainton*) Just responding to Mr Collins' question about penalties: apart from losing the approval to which the false data related, on conviction on indictment the person would be subject to an unlimited fine.

Chairman

1016. The person concerned being whom?

(*Mr Bainton*) The person who provided the data, who made the application.

Mr Mitchell

1017. I just want to take a little detour into OPs, having read so much about them in Christopher Booker's column in the *Sunday Telegraph*. This is primarily, presumably, a health and safety matter but why was the use of OPs in sheep dips and cattle treatment and that kind of thing approved in the first place? Why, when all the consequential nerve damage began to come out, were they not withdrawn?

(*Mr Bruce*) I do not think I am the right person to answer that question, Chairman. You will understand there is a sister agency called the Veterinary Medicines Directorate and it is they who actually approve sheep dips and the way in which they are applied. I think I would be standing on toes if I were to try to respond to that question.

1018. What a shame!

(*Mr Bruce*) I am sorry, Mr Mitchell!

1019. If they have been treated with OPs and you trod on their toes, they might not notice! However, let us move on to the consumer. You note that residues in sample foods are virtually all within the minimum levels and only rarely has a question of consumer health arisen, but of course it is consumer perception as well, and consumers are afraid. There is a kind of atmosphere of concern and alarm about pesticides so any residues are therefore a problem, are they not?

(*Mr Bruce*) I am delighted this question has been asked because it does allow me to put the other side of the story, if I may. That is, you are aware, I believe, as a Committee that each year this document is produced. This is the annual report of the Working Party on Pesticide Residues. Everything which is discovered through the £1.6 million sampling and analytical exercise is reported here, as are other details provided by retailers. So everything we know and all the evidence is reported for public consumption. The chairman of the Working Party in his foreword made the point, as you have done, that there is a public concern about pesticides, but I think the important thing is to read the next part in which the chairman says, "However, the data presented in this report demonstrate unequivocally that exposure to pesticides in our food is minimal and exceptionally unlikely to cause harm." He goes on to say, "The residues data are reassuring and demonstrate that pesticides are used properly by the vast majority of farmers and therefore do not present a risk to the consumer of crops grown on farms which use pesticides." I think it is important to have that in mind as well. There was discussion with the BAA in the previous session about maximum residue levels and ADIs, and I would not go into that now but simply underline the point that a maximum residue level is not a safety level, it is the expected level of residues if good agricultural practice has been followed, so I do not think one should be too alarmed if something goes beyond the maximum residue level.

[**Mr Mitchell** *Cont*]
The important fixed level is the acceptable daily intake which, as Dr Martin explained earlier, can be a hundred times the maximum residue level. I hope there is some reassurance in that.

1020. You see yourself as being in the assurance industry.

(*Mr Bruce*) No, I see myself as being in the truth business.

1021. But people get suspicious about official assurances like that. We were told earlier, and you have just repeated, that there is such a big margin of safety built into the residue level calculation that therefore any failures do not really matter, but that sounds rather complacent.

(*Mr Bruce*) No, it is not meant to sound complacent. If there is an exceedence of the MRL, it indicates that something is not right, that good agricultural practice has not been followed in that particular case. If I can give you an example, there was discussion about lettuce in the previous session. What is found in lettuce, most commonly winter lettuce, where we are above the maximum residue level is a product which is not approved because of the risk it poses for operators. When we found that we did not sit there and say, "Oh dear, but never mind it is only between the MRL and the ADI", what we have done over the last three winters is to carry out enforcement campaigns, people have been taken to court and prosecuted and there is another enforcement campaign going on now. So what the exceedence of the MRL has done is to signal there is something not right, and we have taken action against it and sent shock waves through the sector until it is made right.

1022. How do you work in that context? Do you find excessive residue and then work backwards to find out how it has got there? Or do you monitor the use on the ground, on the farm?

(*Mr Bruce*) We can do both those things. If I may, I will ask John Bainton just to speak on that because he has been closely involved.

(*Mr Bainton*) The monitoring occurs through purchase of food commodities from various outlets—supermarkets, ordinary shops, greengrocers and so forth. That is our primary source of information and that is the information published by the Working Party on Pesticide Residues. Where we identify a particular continuing concern such as the residues of unapproved pesticides in British lettuce or unacceptable residues of a lindane contaminant in imports of frozen Chinese rabbit, we then mount special enforcement campaigns. In the case of the lettuce, this has involved us taking samples from various stages in the supply chain right back to intercepting them at harvest on farms and taking them off for analysis. In the case of imported rabbits, it means intercepting them at the ports—we do not go to China.

1023. I can understand you checking imported chickens from China but—

(*Mr Bainton*) Rabbits.

1024. Yes, I know you said rabbits. Does that mean you do monitor on the farms or you do not monitor on the farms?

(*Mr Bainton*) We do not monitor on the farms, but we have powers to enforce on the farms and will do so when it is cost effective.

1025. What do you rely on? The reports of the user?

(*Mr Bainton*) We rely primarily on the reports of the Working Party on Pesticide Residues. It is not a simple slice of foods in circulation, it is itself targeted towards areas where you would expect to find pesticides, and even so in only 1 per cent—only occasionally—do you see a single sample exceeding the MRL. Where we see evidence of repeated abuse such as with lettuce, which has been going on for some years, then we go on to farms and take samples, or we will take samples from wholesalers and try to trace where the problem is arising and deal with it.

1026. You have only got 200 staff—198 or whatever. How many are actually employed exclusively in pesticide enforcement and monitoring?

(*Mr Bainton*) The 198 staff are at the building in York. We use other agencies to collect samples for us. In the case of going on to farms, we generally use the MAFF FRCA—

(*Mr Bruce*) Farming and Rural Conservation Agency.

(*Mr Bainton*) We also use the Central Science Laboratory to do the analyses. In other cases where there are operator safety concerns we may use the Health and Safety Executive for enforcement, and we use the Ministry's legal services. So most of the work is additional to the 198. I could not estimate, given the very wide number of agencies involved, immediately the staff time.

Ms Keeble

1027. We have heard two quite different things in a sense this morning. You have read from the Working Party report that everything is okay, and I think I recall seeing the report but you can understand I have not read it cover to cover. On the other hand, you have also said that you have taken enforcement action, and certainly one of the things I have learnt this morning is that residues actually get into the pulp, I thought they were purely on the outside. It is not surprising if consumers are concerned because, on the one hand they hear people say that it is all okay, but on the other hand they hear about you taking enforcement action and the like. Do you accept the consumers' concerns are justified? How do you intend to meet them other than just reading out statements that it is all right?

(*Mr Bruce*) I think it is all to do with explanation. We have tried to demonstrate this morning what the significance of the maximum residue level is, and I think many people do not understand that maximum residue level is not some sort of ceiling and once you have gone beyond that you are in some sort of red zone. That is just not true. In order to explain what this means, this report is a very useful document, and I may say that in order to make it more accessible this is now free to anyone who asks—all of that. It is also on the Internet, every word and every number is available for people to see. There is a wealth of information, straight fact and informed comment, which is helpful to them in their understanding and I

[Ms Keeble *Cont*]

do not see enforcement as weakening that reassurance; I see it as a very necessary part of the process that where in the judgment of those who are expert in these matters there is something that needs to be put right, we actually step in and take action. It is a part of that reassurance process.

1028. But one of the things which was very evident in the written submissions that we got on this was that there is a sense of complacency because our regulatory standards are supposed to be good, our enforcement is good, and you heard the complimentary remarks made by the British Agrochemicals Association, and yet that does not square with public concern. Certainly I think the public has got some justification given the fact that there are problems and perhaps the problems are rather wider than they might have thought. Do you not have any sense of anxiety about the public's misgivings or that the public's misgivings might indeed be justified?

(*Mr Bruce*) If the public is concerned, I am concerned. I think that the approach that we have to take is the one that we have followed so far of having a highly rigorous scientific process and explaining what the significance of all of those checks is within the system. We cannot stop people worrying or choosing to worry about pesticides, but if we carry out a rigorous and effective evaluation system and we monitor and we enforce, that, I believe, is the Government carrying out its responsibilities for ensuring that food is safe. Beyond that, it is for people to choose what they wish to give their minds to.

1029. We have heard quite a lot about what happens in terms of domestic checking and consumption enforcement, but what substantial amounts of food are imported? You said something about the Chinese position, but there is also a lot of fruit and vegetables, so what additional procedures are in place to protect the consumer from foods produced in countries that have less stringent criteria?

(*Mr Bruce*) Well, firstly, I would say that quite a lot of our food supply comes from within the European Union where we are working more and more on a harmonised basis. There are something like 9,000 maximum residue levels agreed between the Member States of the Community and that, I hope, gives a feeling of some reassurance that we are working to common standards, but we do not just stop at the European boundary. The monitoring campaign which you see here is looking at third country imports as well. It is ensuring that what comes in is in line with our domestic MRLs or if MRLs do not exist because it is something exotic, then we look to see whether there is an internationally agreed figure from the Codex Commission and we take that as being the benchmark. The fall-back in all of this is that there is the Food Safety Act of 1990 which requires those who sell food to ensure that it is of a proper quality and standard and fit for consumption, so there is always a long-stop in this if it should have evaded any other controls.

1030. Do you actually check the European food because what we hear in other areas, in particular, for example, in beef, is that while standards might be harmonised, the monitoring and enforcement is not?

(*Mr Bruce*) We do check European produce. There are no closed areas in our monitoring campaign and we apply it to selected samples on roughly the same basis of supply, so if it is fifty-fifty domestic and imported, then that is the sort of balance of our monitoring.

1031. Just one point of clarification, you mentioned about MRLs being set, 9,000 set, and internationally agreed figures and so on, but I got the impression from the previous witnesses that in fact MRLs had to be set before chemicals were used. Is the MRL set for the chemical or is it set for the foodstuff?

(*Mr Bruce*) It is a combination of a foodstuff and a chemical which together give you a maximum residue level and the intention certainly is that in the future in the European regime we would like to see the maximum residue level being generated alongside the approval, but of course we are catching up with a lot of history as well.

1032. So there are standards set for all the chemicals, but not all the chemicals as applied to all the foodstuffs? Would that be right?

(*Mr Bruce*) Not yet, but coming, is the answer.

1033. Are there any sort of glaring gaps that present difficulties?

(*Mr Bruce*) No, I think that the areas which are of most concern have been tackled as priorities, but there are still uncovered areas that we must work on.

1034. Which are what? Can you identify them?

(*Dr Martin*) Not off-hand because again it can be both chemicals and crops.

Mr Collins

1035. In paragraph 19 of your evidence, gentlemen, you refer to your work in advising MAFF on policy related to research and development. Now, it may be that we should be asking MAFF or others directly on these matters, but we would be very interested in your perspective because there is a very interesting reference at the end of paragraph 19 to the fact that current projects include the effects of domestic processing on residue levels at the point of consumption. I would be very interested if you could just say a few words about that research and what it is showing, if you can.

(*Mr Bruce*) May I just make an introductory comment and then I will pass it to Mr Bainton, if I may. We manage on behalf of the Ministry a total programme for pests and pesticides of about 100 projects costing just over £8 million. Within that we have an element of about £1.1 million which we regard as food safety-related research. It is in that latter area that we have had work going on for a number of years which is looking at the effects of different processes in the home, but, having just set the scene, I will ask Mr Bainton to take it a little further.

(*Mr Bainton*) The work in question is part of the programme to look at the effects of domestic and commercial processing on pesticide residues in food

[**Mr Collins** *Cont*]
which was started in 1994. The major contractors are the Central Science Laboratory, the Leatherhead Food Research Association, the Campden and Chorleywood Food Research Association and Reading University. The funding is MAFF money and it is not part of PSD's own budget. The programme is expected to be completed by March of next year. The total cost is something like £½ million, actually £460,000, so almost £500,000. The findings have been in a sense very unexciting. They find that, for example, if you boil food which has a water-soluble pesticide, such as cabbage or cauliflower with chlorothalonil in it, you lose most of the pesticide because it comes out in the water. In other cases, such as stir-frying, there is almost no effect, no significant effect on the pesticide residues. Similarly, microwaving potatoes causes a slight apparent concentration of pesticide in terms of the weight of the cooked potato to the raw potato, but that is due entirely to the loss of water, so by heating the pesticide, microwaving it or putting it in the oven with a baked potato, all you are doing is reducing the weight of the potato, but not altering the pesticide residue.

1036. Are there any circumstances on the face of the research which you have seen so far, and I appreciate you say it is incomplete at the moment, but are there any circumstances in which domestic practices where they relate to cooking or boiling or microwaving or the addition of other substances, salt and herbs and so forth, can actually result in the pesticides breaking down or changing their chemical composition in a way that would be a threat to human health?

(*Mr Bainton*) No, we have not identified anything which is a cause for concern.

Chairman

1037. But that is a priority for you in your research, that you are looking at the breakdown of products as well?

(*Mr Bainton*) Yes.

Mr Hurst

1038. Dealing with the approvals system, you mention a number of factors which you take into account and one of them is protection of the environment, and whilst this is an investigation into food safety, I wonder if you could just briefly say what elements you would take into account in that assessment?

(*Mr Bruce*) We are looking at the effect on soil and water and on living creatures within the fields and areas where pesticides may be used. We have a range of specialisms within the agency looking at the eco-toxicology of these products and we look just as critically at the environmental implications as we do at the food safety implications, so I believe that we have a very comprehensive view of this, but that is confirmed once an appraisal leaves the Pesticides Safety Directorate and goes in front of the Advisory Committee on Pesticides because in there are representatives with very keen environmental interests and a deep knowledge and so our findings are taken apart in a very critical and dissecting way.

1039. Is there not an inherent problem in that the purpose of a pesticide of course is to kill, as Mr Collins was saying, the bug and of course the bug is the foodstuff of many of the creatures which live in the environment you are seeking to protect?

(*Mr Bruce*) Well, there has been some very interesting work done and you are probably aware of an RSPB study on the indirect effect of pesticides on birds. That was not totally conclusive because in fact the evidence relates to the grey partridge as being the proven case. In others, there is an element of uncertainty. I think that the way that we need to look at this is that if this is in fact the case, that there is an effect on the food supply and, therefore, on other things, we have to ask what can be done in managing arable land in order to provide opportunities for feedstocks still to exist for the birds. That is why we are promoting the idea of set-aside strips, of field margins which are unploughed, of buffer zones to protect the water. There are a number of techniques which can be used which we are promoting through the Pesticides Forum which I referred to earlier, ways of keeping a balance between the use of agrochemicals and the natural balance of the countryside.

1040. And if one accepts, and to a large extent I do, the findings you have put forward concerning the safety to the human from the monitoring of pesticides, would you accept that the public are very far from assured that these pesticides are not having devastating effects on wildlife and the countryside?

(*Mr Bruce*) Well, I understand that concern. I see it in the report. I do believe, though, that the systems which we are employing are providing just as much environmental protection as they are providing human protection.

1041. Do you feel there is more progress perhaps to be made in that area?

(*Mr Bruce*) Well, the point we were talking about earlier was about new generations of pesticides coming along and one of the objectives in the minds of manufacturers is to ensure that what comes on the market is better in terms of its specificity and its side effects than anything that went before, but perhaps I could ask Dr Martin if he wants to say anything on environmental assessment.

(*Dr Martin*) Yes, two things really. One is that in the risk assessment that goes on before a pesticide is marketed, we will look at quite a range of wildlife species, birds, fish, aquatic invertebrates, mammals, and will take into consideration, if you like, the first step in the food chain in terms of the likely level of exposure, for example, in seed eating birds and material that is going to be used to apply to grain, so those interactions are part of the environmental risk assessment. Secondly, in the same way that we have a scheme for monitoring the effects of residues with respect to human consumption, we also operate a monitoring scheme with respect to wildlife where there is some evidence to suggest that wildlife deaths are occurring as a result of pesticide use, so we do have that back-up as well to the system in the same way as we have for the consumer.

Mr Hurst: I am very grateful, Chairman, because that was not a scheduled question and, therefore, with your leave, I will omit the scheduled question I was going to ask.

Chairman

1042. I will ask it for you then. Very briefly, before we let you go, could we ask you just exactly what changes you plan to cope with the creation of the Food Standards Agency in terms of retraining staff and making sure that your work is integrated with theirs?

(*Mr Bruce*) Thank you for that opportunity, Chairman. We, as I think has become clear from the discussion today, are used to working with a number of other government departments who have their own specific expertise and their own interests. We are delighted, as I said at the end of the memorandum, to work with the new Food Standards Agency. What we envisage is that if you imagine the two sides of a ladder, there will be a number of rungs which lead across from the Food Standards Agency into PSD and back again, so that from preparing evaluations through the Advisory Committee procedure, through membership of the Advisory Committee, through taking decisions on behalf of ministers at the end of the process, at each of these stages the Food Standards Agency will be fully involved, as are the other departments now. I do not believe it calls for any major reorientation within PSD or any retraining of staff. What I think it calls for is the development of the very positive relationships we have with other departments broadened to include the FSA.

1043. Where would you rather be—within the Food Standards Agency or within MAFF?

(*Mr Bruce*) I would rather be within PSD, Chairman.

1044. You have no preference? You do not think it matters?

(*Mr Bruce*) That is not for me to say, Chairman, but we are delighted to be the agency that we are. We believe, as others have kindly said, that we have a good reputation and I believe that we do a good and careful job and I think that is how we would prefer to be judged.

Chairman: Gentlemen, thank you very much. We will judge you on that basis. Thank you very much indeed.

Memorandum submitted by Friends of the Earth (C41)

SUMMARY

Friends of the Earth welcome the proposal for a Food Safety Agency as an opportunity to put right the crisis in the UK food chain.

The causes of the present food problem lie throughout the food chain. The proposed Food Standards Agency must therefore have a remit to cover food production from field to plate so that problems can be rectified at source. The new agency should be known as the Food Safety and Quality Agency to emphasise the full breadth of its remit.

Friends of the Earth make the Following Recommendations

1. More emphasis should be placed on the links between food standards and poor farming and animal welfare.

2. More emphasis should be placed on the links between environmental problems associated with intensive farming and food safety.

3. The proposed agency should focus on eliminating and reducing risk from food contamination rather than allaying public fears.

4. The agency will need to work throughout the food chain to eliminate sources of contamination and improve food quality.

5. The agency should have a duty to monitor food imports and restrict entry into the country if they fail to meet UK standards.

6. The necessary changes in food production and public attitudes to food will require the agency to work closely with the departments of Health, Education and Agriculture, and the HSE and Environment Agency.

7. More emphasis is needed on the quality of the UK diet particularly in relation to sugar, salt and fat intake.

8. The agency should have responsibility for monitoring and regulating food contamination arising from packaging, eg bisphenol-a.

9. The agency should have powers to influence advertising of food when necessary to improve the UK diet.

10. A separate agency to assess and approve pesticides (attached to the Environment Agency) should be established. The Food Standards Agency would have powers to veto approvals and call for more trials on health grounds.

11. Trials and releases of genetically modified organisms in the field and into the food chain should be more strongly regulated based on the precautionary principle.

12. Rendering and pig swill boiling should be brought under closer regulation.

13. The new agency should be sufficiently financed and staffed to fulfil all its proposed functions and have the capacity to carry out independent research.

14. Freedom of information and the right to know should apply to every aspect of the agencies functions and operations.

15. Consumers should have the right to know through product labelling what additives, pesticides, genetic manipulation and other treatments have been used during the growth and production of food and drinks through mandatory labelling.

1. INTRODUCTION

Friends of the Earth welcome the opportunity to present evidence to the House of Commons Select Committee on the establishment of a Food Standards Agency. Our response follows the format as used in Professor James' initial proposals in the absence of any other documents to respond to. Our more general comments are set out in the first section of this response.

2. GENERAL COMMENTS

Friends of the Earth warmly welcomes the Government's intention to set up a Food Standards Agency in the UK as a long overdue measure to safeguard the health of the British people. However, we believe that reform of food standards will have to go further than so far envisaged by Professor James. The priority of the proposed agency should not be to restore public confidence in the UK food chain, but to ensure the provision of safe, healthy food for public consumption via a production system based on sustainable principles that pay regard to environmental and animal welfare as well as that of humans.

Many of the health problems which have occurred in the last decade can be traced back to the very start of the human food chain.

- The BSE crisis is the best example of how a cost-cutting approach to food production has led to a crisis that still threatens the long-term viability of the UK's beef and milk producers and serious implications for public health;
- In 1994, the MAFF issued a warning that carrots should be topped and peeled to prevent health problems from organophosphate insecticides residues—unfortunate when the goodness is mainly in the skin;
- The infection of carcasses at abattoirs stems from faecal contamination of the animal's coats and skins as a result of intensive production followed by long distance transport by lorry.

These are just a few of the many examples of where the UK food production industry is failing to deliver food that can be trusted by the whole population. There are many more which have been well documented and that result in serious health and social implications and demonstrate how unsustainable UK food production has become.

In the last 50 years there has been a slow erosion in the quality of the UK's food as it has been replaced by the drive for ever cheaper food. We are now paying for the change both through our health and our pockets (through taxes and water charges), for instance the need to strip nitrates and pesticides from drinking water.

Animal health and welfare has also suffered under the philosophy of "cheap is beautiful" and there is growing evidence that intensive livestock production produces an unreliable product—one in four intensively produced chickens are contaminated with salmonella and the number of reported salmonella food poisoning cases has risen three times since 1981 to over 29,000 in 1996 (*Prescription for Change, FOE, 1995*).

The major food retailers have encouraged a culture in which appearance of food seems to take precedence over the quality when deciding whether to buy. The new agency should also seek to re-educate the public so that they accept some blemishes as healthy and wholesome rather than something to be avoided at all costs.

Following these crises, the general public and farmers are prepared for wholesale changes in the way we grow and process food in the UK and the quality of the food which we import.

The proposed Food Standards Agency needs to have sufficient powers, sufficient finance and sufficient staff to reverse the decline in the quality of our food. This is a major task which involves not only re-educating farmers and growers to make their industry more sustainable but also the general public on diet and nutrition.

We would support a Food Standards Agency which seeks to improve the quality of food production from field to plate. The involvement of other ministries and agencies will be essential if this goal is to be achieved.

There are a number of omissions and weaknesses within the proposal which we feel need to be addressed:

- There is insufficient recognition that poor farming and animal welfare lead to poor food standards;

- There is a failure to link environmental problems associated with intensive food production to food quality;
- The proposal fails to adequately address the issue of regulating genetically modified organism trials and releases in terms of food safety and environmental protection;
- The emphasis of the proposal appears to be on allaying public fears rather than removing or reducing risk;
- How will food imports be monitored and by whom? What powers will the new Agency have to regulate, for instance, imported food contaminated with pesticides?;
- More emphasis should be put on the need for the Agency to work with other ministries to achieve improvements in food quality;
- The proposal does not fully recognise the huge cultural and economic changes needed to bring about the desired improvements in the UK's diet and farming systems;
- The new agency should have a direct input into the control of food and drink advertising if the intention is to help improve the health of the nation paricularly relating to the intake of sugar, salt and fats;
- The new agency should also have a duty to monitor and regulate chemicals used in food packaging and promote research into low chemical packaging.

SPECIFIC COMMENTS ON PROFESSOR JAMES' PROPOSALS

3. *Introduction*

Friends of the Earth agree that the protection of public health and consumer interests should be the main priority of the new agency. However, both poor environmental standards and poor animal welfare standards put food standards at risk. The new agency should publicly recognise these links and work with all sections of the food chain to eliminate problems at source and move towards sustainable food production in the widest sense of the phrase.

The involvement of environmental and animal welfare organisations is important in achieving this goal. What may be best for public health need not necessarily be best for the environment and animal health. For example, a smaller number of state-of-the-art abattoirs leads to longer distance transportation which has implications for both animal welfare and the environment.

4. *Issues of consumer concern*

Friends of the Earth is in broad agreement with the issues which require urgent attention. However, we would suggest that the public no longer require convincing that the current system of food production is failing. However, the homogenisation and processing of food marketed by major retailers makes it difficult for the public to find out exactly where the blame lies.

The introduction of genetically modified organisms into the human food chain has been done without adequate public debate concerning the need, ethics and risks involved. It is important that this debate takes place in the light of full information before any further releases or approvals for GMOs are made.

We would add the following points to those listed:

(i) Contamination of food with antibiotic residues. This increases the chances of antibiotic resistance building up. We feel that the prophylactic use of antibiotics by farmers has been inadequately policed in the past and that the new agency should have a key role in dealing with offenders and educating farmers on the means to avoid excessive use. The only real solution to this problem is less intensive livestock production.

(ii) The use of genetically modified organisms in the UK's food chain is liable to escalate before the new agency comes into being. It is therefore essential that the Government puts in place a moratorium on GMO trials and approvals until a wider debate on the ethics, benefits, risks to human and animal health and the environment has taken place. This should be followed by regulations in which the precautionary principle takes precedence over the interests of businesses.

(iii) A high standard of nutrition is an essential part of sustainable development. Friends of the Earth believes there is a low level of knowledge on nutrition in the UK and the new agency should play a key role in improving the current situation. There are also problems of equity and food quality within the UK which need to be addressed urgently, for example, many households on low incomes are unable to afford adequate nutritious fresh food, especially organic.

(iv) The inclusion of drinking water quality within the brief of the new agency would be supported by FOE as a logical extension of the field to plate remit. Placing the Drinking Water Inspectorate within the Food Standards Agency would enable common food and water problems, such as pesticide contamination to be tackled and eliminated at source and also gets closer to total exposure, eg to pesticides and lead. It would also be logical to include bottled water quality within the new agency's remit.

(v) A comprehensive food labelling system, covering all additives, pesticide treatments, antibiotic residues and GMOs, would enable the public to make informed choices about what they are eating.

5. *The Current System—omissions*

The current system of regulating the UK food industry set out on page 13 makes no specific mention of the regulation of the rendering industry. This process has not only been closely associated with the BSE outbreak but also causes public nuisance wherever it operates. For example the recent public enquiry and decision on the Smith Brothers (Hyde) Ltd plant near Manchester, revealed the full extent of problems associated with odours. It is important that this industry receives more regulatory attention than hitherto. The lines of responsibility need to be clearly laid down by the new agency and standards on the process and resulting odorous emissions rigorously enforced. The boiling of swill for pig food also requires a similar level of attention to ensure health and environmental standards are adhered to.

6. *Problems with the Current System*

The multi agency approach to the monitoring of food standards and processes has led to confusion over responsibilities for enforcement. There has been a lack of policy integration across government departments. This is particularly true in the case of the rendering and pig industry mentioned above. The new agency must seek to ensure that no part of the animal and human food chain is left out of the enforcement of standards, however marginal.

With the current dispersed structure of the food industy within the UK, co-ordination and consistent enforcement of regulations are vital to enable individual sections of companies or different companies working in close partnership to be effectively policed.

Before the Food Standards Agency is set up, Friends of the Earth recommends that the harmonisation of policy and practice within the Environment Agency is reviewed to ensure that appropriate lessons can be drawn concerning the merging of several organisations into an effective national body.

Such a review should extend to the status and pay scale problems which have been reported to have occurred within the Environment Agency. The problems facing the food agency are too important to allow a stuttering start to occur.

7. *Other Possible Models*

As already stated, Friends of the Earth believes that the agency should be built around the field to plate concept. It is therefore essential that the dairy and milk industry are included in the remit of the agency.

It will be important that the new agency provides access to information from food labelling through to the its operations and policy making decisions if the public is to have confidence that the guarding of food safety and quality is in safe hands.

PART II

8. *Some basic principles*

FOE are pleased to see that the proposal includes an acknowledgement that there is need for both structural and cultural reform within the food industry. The cultural reform should not be confined to the industry. The public has developed a "cheap is good" mentality to food over the past 50 years. There is a low level of confidence in some sectors concerning the use of unprocessed foods in the preparation of meals. Unless these attitudes are adequately addressed by the agency the "cheap is good" mentality will persist.

We fully support the idea that the agency should be fully independent of Government and industry. This will not be achieved unless there is sufficient public money to fulfil all the proposed functions. We feel that the free advisory service offered by ADAS from the 1950's is a model worthy of investigation in terms of spreading good practice throughout the food chain, allied to stringent and well enforced regulations.

Bullet point 8 refers to the chemical safety of food. It remains unclear how the current system for monitoring pesticide residues in food and the approval and review system for pesticides, currently carried out by the Pesticides Safety Directorate of MAFF, will work once the agency is set up. It is also unclear who will be responsible for investigating when pesticide residues are detected. Similarly, who will be responsible for pesticide contamination of drinking water? Currently little preventative action is taken when breaches of the EU standards are detected.

The agency should aim to achieve a consistent level of inspection and enforcement throughout the country. If this work is to be effectively carried out by local authority Environmental Health Officers then it will be important to ensure that every local authority has sufficient staff to achieve the high standards set by the agency and that the agency has sufficient power to intervene when local standards fail to meet national targets.

9. *Formation of a Health and Safety Commission/Executive Type Body*

If other organisations are to be used as a model for the agency then it will be important to investigate the model thoroughly so that short comings can be eliminated. The Health and Safety Executive (HSE) has been effective in achieving improvements to worker safety in many industries. However, the HSE is not financed or staffed sufficiently to improve standards in small enterprises in a number of highly dispersed industries such as construction, horticulture and farming. For example, there are between 75 and 90 agricultural HSE Inspectors, at any one time, meaning that each inspector covers 3,000 holdings. Many small employers and self employed workers have never had contact with the HSE. The whole food production and processing chain is characterised by hundreds of small companies working on small margins which are constantly looking for ways to save a penny as well as a few massive companies that dominate the market.

The HSE has a duty to protect neighbouring households around a factory. However, we are not convinced that the "public has considerable confidence" in the work of the HSE in these circumstances or indeed that the public is aware of the role the Executive plays in this respect.

Friends of the Earth believes that the agency should focus on preventing problems at source. A good example of a successful national campaign delivered at a local level is the Oil Care Campaign, which has been set up by the Environment Agency. This targeted all oil users with information about how to manage oil to prevent pollution. The Campaign appears to have cut the number of oil related pollution incidents in its first two years from over 6,000 to around 5,000. Similar campaigns could be organised to eliminate pesticide residues from food and water.

The agency must be effective throughout the country. It is therefore vital that there is an efficient regional structure and that there are very clear chains of communication on policy, practice and enforcement.

10. *A New Food Standards Agency*

Policies on food quality will have to be carefully integrated with policies on agriculture to ensure the system is truly sustainable—the aim of all Government departments and agencies. If the Agency is going to have a remit covering field to plate, the environmental and animal welfare impacts have to be given equal weight as the human health aspects. What is safe to eat is not necessarily safe for the environment or good for animal health and welfare or sustainable. For instance, a switch to synthetic pyrethroids (SPs) could eliminate organophosphate residues from fresh produce but may result in more severe surface water quality problems because SPs are more toxic to aquatic organisms. Similarly, a recommendation to eat more fish as opposed to meat may lead to further unsustainable overfishing.

We believe that the new agency has no other option than to examine the whole human food chain which would include a review of agricultural policies and food industry practices which have resulted in an unsustainable system. Public concern over food is such that such a comprehensive review would be welcomed. We also believe it would be welcomed by many farmers who would seize the chance to get off the chemical intensive treadmill they have been forced to use for the past five decades.

11. *Powers and scope of the New Agency*

The proposal suggested the agency should have a remit "which encompasses the complete food chain". It is unclear how the agency will be able to influence agricultural policy and practice from which many of the current food chain problems emanate. With the impending CAP reforms it will be important for the new agency to influence the UK's position so that it will result in agricultural reforms which will be reflected by safer better quality food. To achieve the necessary changes the agency must have considerable status and clout at a level above that currently enjoyed by the HSE. To be successful, the Agency must have sufficient powers to intervene and prosecute when quality standards are not being met and a commitment from the Government to ensure that penalties for breaches act as a real deterrent.

We agree that the Meat Hygiene Service should be included within the Agency.

12. *Functions of the New Agency*

(a) *Developing Policy and Drafting Legislation*

The chemical safety of food includes contamination from packaging, processing, atmospheric deposition in rainfall, in sewage sludges and in irrigation water. It will be vital that the new agency monitors contamination of food with pollutants such as dioxins and heavy metals and develops policy on food safety in relation to these hazardous materials. Policy development in this area of food safety would require co-ordinating with other agencies and government departments to ensure that policies are consistent to give the required end product, ie safer food (free from pathogen and chemical contamination) and better quality food (reduced sugar, fats and salt).

The public (and scientists) should have a right to know about all the chemicals present in food packaging. Industry currently refuses to disclose this information due to "commercial confidentiality".

The agency should develop a precautionary approach to food packaging chemicals. For example a chemical like bisphenol-a, a proven in vivo oestrogen mimic, should not be used in food packaging. The agency should also examine the potential for low-chemical packaging, to provide additional security to consumers.

Home produced food can also be contaminated with a range of pollutants and keen vegetable growers could be unknowingly exposing themselves to hazardous chemicals. We feel that the new agency must include home grown produce in its monitoring programme especially because the home production of fruit and vegetables has a significant part to play in sustainable food production.

Animal health and welfare must be included at the policy development stage.

Monitoring the quality of the UK diet and regional variations for all ages will be important in developing policy in other areas. This is particularly true of food and food advertising aimed at children. It makes sense for the new agency to have powers to regulate food advertising across the full range of foods because it has far greater influence on what people eat than food labelling.

The new agency should implement national targets for ensuring an adequate diet for all.

Neutral objective research carried out by scientists who are truly independent of the food and agro-chemical industry will be essential if the new agency is to win national respect. It is therefore essential that the government provides sufficient budgetary resources for this to be possible.

As we indicated earlier, the new agency will come up against many barriers in its quest to improve the quality of the UK's food. The education of the public and industry will not be achieved by the new agency alone. The food processing industry will resist many changes necessary to improve the UK diet. It will therefore be essential for the agency to have regulatory powers to ensure that the industry follows the procedures and guidelines set.

(b) *Meat and milk hygiene*

We agree that the new agency should take over the responsibilities for meat and milk hygiene. This should lead to a more consistent level of enforcement which will benefit quality producers. However, consistency of enforcement does not naturally follow the establishment of a new organisation and will have to be worked at.

The enforcement procedures should seek to reduce the problems associated with inspectors becoming overfamiliar with the establishments which are being regularly inspected.

(c) *Improving the links between veterinary epidemiology and human health*

We emphasise the importance of including renderers and swill boilers within the regulatory framework of the new agency.

(d) *Responsibility for pesticide safety*

The safety testing of pesticides must include adequate programmes for safeguarding human health and the environment, both in the long and short term, along all food chains and the safe disposal of unwanted, unused and waste pesticides. If a pesticide cannot be safely disposed of when it has been used or rejected for whatever reason it should not be given approval. The toxicology of pesticide breakdown products must also be included.

The fate of pesticides in the environment and their impact on wild species does not seem to be something which falls naturally to the new agency. We accept that the agency should have a substantial input into pesticide approvals and have the power to veto or review any product on health grounds. However, we feel that an independent body to scrutinise pesticide safety across the board would be more appropriate. Such a body could be funded by a tax on pesticide sales. The Environment Agency and Conservation Agencies would also have powers to veto approvals on environmental grounds.

Any new pesticide evaluation system must include public access to all research findings. Whichever agency finally has responsibility must have the power to insist on further testing and to have an input into the design and methodologies employed. Pesticide manufacturers would be responsible for funding all research although it must be independent (as (a) above).

The establishment of a zero incidence target for pesticide residues and progressive targets for reducing overall pesticide usage in food production and storage would provide an added incentive for industry to change their production methods.

(e) *Responsibility for the safety of Veterinary Medicines*

A similar system as described in the section above (5 (d)) should be adopted for veterinary medicines.

(f) *Surveillance of Microbiological Food Safety*

The proposal for the new agency to take responsibility for food safety throughout the food chain is welcomed by Friends of the Earth. It is important that the animal food and animal food processing industry, including rendering and swill boiling, is included.

The agency should establish targets for reducing microbial contamination of food as quickly as possible.

(g) *Responsibilities for dealing with food-borne disease outbreaks*

It is important that one organisation takes responsibility both for dealing with a food-borne disease outbreak and ensuring that its implications are understood through the national food chain. The role of the new agency in maintaining a high level of inspection procedures by local authority officers is crucial. The new agency should also consider whether local authorities throughout the country are adequately funded to deliver the level of service expected.

(h) *Responsibilities for Chemical Monitoring and Analysis*

Public exposure to hazardous chemicals via food depends on what is used in packaging on the crop and what is released into the general environment. The range of chemicals which may be found is very large. A well resourced regional laboratory network would offer the capability of dealing with the majority of chemicals on one site in each area. Speciality analysis for more obscure chemicals by one or two labs would also be beneficial. Regional information about pesticide usage and chemical release inventories from industry would greatly assist labs to target the most likely contaminants.

Analytical surveillance for chemicals needs to be extended and extra funding is needed to reduce the time required to establish results. The current timescales for establishing the contamination levels, for example bisphenol-a in canned products, are far too long. Results of the surveillance must be published rapidly (months rather than years), with information on the products tested, including which manufacturers are responsible for which samples.

A levy on polluting industry should be used to fund the laboratories and ensure that they continue to be kept up to date. Such a levy could take the form of a tax on pesticides and chemicals produced or released directly from the manufacturing plant.

(i) *Scientific Services in Scotland*

A similar system as outlined in the previous section should be developed for Scotland.

(j) *Advisory Committees*

The advisory committees should be made up of representatives with involvement at all stages of the food chain. The involvement of environmental, consumer and animal welfare organisations on the environment committee is essential if the goal of achieving a safe and sustainable food production system is to be achieved. We very much welcome the fact that consumer interest groups involvement is to be "robust" providing that this means that they have sufficient "clout" towards the fundamental changes which are required to improve food safety and quality.

All minutes, papers, reports and records of the agency should be covered by access to Environmental Information provisions. Fulfilling the right to know and transparency is an essential adjunct to consumer and environmental representation on committees.

(k) *Research*

We welcome the proposal to include a consumer or public interest member of the advisory committee on the Biotechnology and Biological Sciences Research Council.

The importance of forming a coherent and effective research team for the new agency should not be underestimated. We suggest that the Government consults widely with organisations both at home and abroad to ensure that the fusion of the various research arms of MAFF can be achieved with the minimum of internal strife.

(l) *Food Law Enforcement*

Pesticide residues in food will be monitored by the new agency. It is unclear from the proposal how Maximum Residue Limits and illegal use of pesticide will be enforced. It seems most appropriate that this role should lie with the regional offices of the new agency.

We are disappointed that the proposals on education and information are not stronger. There are real benefits to be gained from getting the whole population onto a healthy diet. In Britain, it has been estimated that diet related diseases cost the NHS more than £1 billion per year (*Prescription for Change FOE 1995*).

It is clear that the new agency cannot act alone in this area but should work in co-operation with the Departments of Health and Education. Following the appointment of a Minister for Public Health, it seems most appropriate for the Department of Health to lead on this.

The magnitude of the task should not be underestimated and many different sectors need to be involved. The fact that many children leave school with a poor knowledge of nutrition, diet and cooking needs to be addressed. There are also many opportunities for professionals in contact with the public to reinforce health eating messages.

We feel that improving the diet of key sectors of the population, the young and low waged in particular, should be a target for the first decade building on the Health of the Nation strategy. Targets should not only cover the nutritional aspects of the diet but also include reductions in chemical, additives, hormone and antibiotic intake via food and drink. There are many obstacles other than information which need to be addressed by the Department of Health and the new agency together and cut across the work of other relevant departments. For instance, maintaining access to fresh food from local shops is important and this could involve protecting these local outlets from closure.

13. *Mechanisms for Accountability*

The new agency should research appropriate food quality and nutrition standards for the UK and the Government should set targets for them to be achieved. There also needs to be a strong commitment on the Freedom of Food information and the Right to Know as noted above. In our view the Agency should seek to include the best features of a number of standard and enforcement agencies in the UK and abroad. As we pointed out above there have been problems in fusing the Environment Agency in England and Wales into an effective unit but there are features of the agency's structure, management and operations which could provide useful lessons for the agency.

14. *Relationships with Ministers*

We welcome the intention to make the new agency independent of government with the freedom to publish their advice. We also agree that the Minister must be ultimately responsible for policy decisions based on advice given.

15. *Relationships with Whitehall*

Improving the quality of food in the UK will involve changes in farming practice. It is therefore essential that both ministers and officials within the Ministry of Agriculture are fully behind the new agency by ensuring that they deliver the changes to the production end of the food chain necessary to improve the quality of the UK. For example, this would include major changes in the meat production to avoid pathogen, pesticide, antibiotic and hormone contamination.

16. *Financing*

We welcome the proposal to fund the new agency from central funds via the Department of Health and the freedom of the agency to spend it as it sees fit subject to public, ministerial, parliamentary (eg the House of Commons Select Committee on Health) and the National Audit Office. The use of licensing and inspection fees for food establishments to provide a major part of the funding for the new agency, as is the case with the Environment Agency, could serve to drive the less scrupulous end of the food industry underground. The level of fees must therefore be set at a level which encourages open participation. We see no reason why enforcement fines should not be used by the agency to further the cause of improving food quality.

17. *Territorial Arrangements*

A strong regional presence will be important if the new agency is to gain national credibility along with consistent policy and enforcement decisions.

18. *Staffing*

It will be important that the staff working for the new agency are appointed from a wide range of bodies to ensure that the desired culture change can be achieved. Staff moving from the Ministries of Health and MAFF should be employed on new contracts to ensure that the distance between the new agency and Whitehall is very clear.

19. *Appointment procedures for the Commission*

We welcome the proposal to advertise for nominations for members of the Commission. This process should be used to ensure the widest possible representation from consumer and public interest groups with the broadest possible range of concern so that one sector is not dominant.

We also welcome the proposal that consumer and public interest groups should be in the majority.

20. *Location of the Agency*

We accept the need for the Agency to have a strong presence in London but, like the Environment Agency, see no reason why most HQ staff should not be based elsewhere. We emphasise the need for the new Agency to have a strong regional presence to ensure national credibility.

21. *Public Interest Representation within the Agency*

Free access to information of food safety is of even greater importance than just seats on the Commission. It is important that interested members of the public should not be priced out of accessing information.

22. *Scrutiny Arrangements*

We feel strongly that the new agency should have clear targets for improving food safety and quality, for instance on pesticide residues and pathogen contamination, by which their performance can be judged. It is important that the targets set should be based on reliable baseline data across the full range of foods and products.

We would also support the establishment of a charter and performance indicators for the new agency.

See 9 above re accountability and scrutiny.

PART III

23. *Establishing the Food Standards Agency*

We would recommend that the Government reviews the establishment of other agencies in the UK and consults overseas before the final structure of the new agency is finalised. It is important that the work of the agency is not hampered by imperfections in its structure.

24. *The Name—A Food and Health Commission*

We suggest that the new agency title should be The Food Quality and Health Commission. This title would clearly state what the agency should be about.

25. *Friends of the Earth's recommendations:*

1. More emphasis should be placed on the links between food standards and poor farming and animal welfare.

2. More emphasis should be placed on the links between environmental problems associated with intensive farming and food safety.

3. The proposed agency should focus on eliminating and reducing risk from food contamination rather than allaying public fears.

4. The agency will need to work throughout the food chain to eliminate sources of contamination and improve food quality.

5. The agency should have a duty to monitor food imports and restrict entry into the country if they fail to meet UK standards.

6. The necessary changes in food production and public attitudes to food will require the agency to work closely with the departments of Health, Education and Agriculture, and the HSE and Environment Agency.

7. More emphasis is needed on the quality of the UK diet particularly in relation to sugar, salt and fat intake.

8. The agency should have responsibility for monitoring and regulating food contamination arising from packaging, eg bisphenol-a.

9. The agency should have powers to influence advertising of food when necessary to improve the UK diet.

10. A separate agency to assess and approve pesticides (attached to the Environment Agency) should be established. The Food Standards Agency would have powers to veto approvals and call for more trials on health grounds.

11. Trials and releases of genetically modified organisms in the field and into the food chain should be more strongly regulated based on the precautionary principle.

12. Rendering and pig swill boiling should be brought under closer regulation.

13. The new agency should be sufficiently financed and staffed to fulfil all its proposed functions and have the capacity to carry out independent research.

14. Freedom of information and the right to know should apply to every aspect of the agencies functions and operations.

15. Consumers should have the right to know through product labelling what additives, pesticides, genetic manipulation and other treatments have been used during the growth and production of food and drinks through mandatory labelling.

October 1997

Examination of Witness

MR PETER RILEY, Food and Biotechnology Campaigner, Friends of the Earth, examined.

Chairman

1045. Mr Riley, welcome to the Committee, on your own. Thank you very much for coming and thank you for your lengthy memorandum as well which we appreciate. I wonder if you could tell me what the Food and Biotechnology Campaigner of Friends of the Earth actually does?

(*Mr Riley*) I am actually half the Food and Biotechnology Campaign and we have a job share and my other half is in Leeds at the moment where we are based. The campaign was launched, Friends of the Earth having been worried about the falling standards within the food chain from farm to plate over the last decade or so, previously having campaigned on agriculture and countryside principally focusing on pesticides and nitrate pollution, and it was felt that there was a need to broaden that campaign out to look at the wider problems along the food chain. The campaign was actually launched last May, so we are still in our first year of campaigning. Does that cover the area?

1046. I think that is helpful, thank you. You know we want to talk to you primarily about pesticides today, but we would like to come to the other issues as well because some of them are concerns in your memorandum which deal with wider issues too, so thank you for that, but can we start with pesticides? We have heard some very optimistic assessments of

[**Chairman** *Cont*]

the work of the PSD so far today. Do you share that optimism or what reservations do you have about the way PSD does its work?

(*Mr Riley*) Well, I think one of our principal reservations is the secrecy in which that work is carried out. It is very difficult to find out what is going on. For instance, last week we rang PSD and asked them if a company had applied for the use of a particular herbicide as a broad-spectrum herbicide on a particular crop and we were told that they were not allowed to tell us that information, so there is a good deal of secrecy about the approvals stage until the actual decision is made and then it is advertised in the pesticides register, by which time there is no opportunity for interested groups, like ourselves, to actually have an input in that process. We think it would be interesting to try and find ways around those obvious problems of commercial sensitivity of the data, but allow us actually just to comment on some of the changes in use and things like that.

1047. You do not think there is a problem with the availability of information after the approval has been given and you are happy about all that?

(*Mr Riley*) We have never tried to get this information to the degree that we are allowed to and it is something we may well look at in the future, but, from my understanding of the regulations, we can actually look at the data, but we have to have the minister's permission actually to publish that data if we have got any reasons to be concerned about the decisions which have been based on that data.

1048. But the principal problem you encounter is in relation to commercial confidentiality?

(*Mr Riley*) It would appear so, yes.

1049. And your view, as Friends of the Earth, is that that is over-severely interpreted and there is room for a more liberal approach?

(*Mr Riley*) Reading the regulations, I think so, yes. As I say, we have not actually tested the system yet, so we will reserve judgment until we have tested the system.

1050. So you are raising a theoretical problem rather than a problem of the practical difficulties so far?

(*Mr Riley*) Yes, I think that in the past we have tried to get pesticides taken off the approved list because new evidence has come to light, whereas I am not aware of anybody actually trying to prevent a pesticide coming on as a fresh approval, principally because the mechanisms for us to assess the data do not exist before their approval is made.

1051. What about the Food Standards White Paper and the proposal that the PSD remains within MAFF as an executive agency there rather than it being transferred to the Agency—how do you feel about that?

(*Mr Riley*) Not very happy. We feel that the Pesticides Safety Directorate, the emphasis is on safety, protection of the environment, protection of public health, protection of workers, and only a small part of their work is actually associated with the use of the pesticide as a thing to kill off pests on the farm, so it does not seem to me to be particularly logical to leave it with MAFF when all the other safety functions of MAFF are being taken out and put into the Food Standards Agency, and although I think there are problems of where the PSD naturally sits because I do not think it naturally sits within the Food Standards Agency, we feel that maybe it should remain as an executive agency of the Department of Health and we feel it is very important that the team is kept together as a team.

1052. The PSD team is kept together?

(*Mr Riley*) Yes, the PSD team, and we think that is very important.

1053. Of course the Government proposes that the Veterinary Medicines Directorate should also remain an executive agency of MAFF. They have very similar functions, do they not? Do you have similar concerns about the VMD?

(*Mr Riley*) There is more difficulty in deciding what to do with the VMD than there is with the PSD in that a lot of the work that the VMD will be doing will be related to animal health and animal welfare and drugs and chemicals that are applied to them. However, we do feel that the approvals for sheep dip and other chemicals, pesticides basically, that are applied to animals to deal with external parasites should pass over into PSD, especially in view of the fact that one of the major impacts of the new generation of sheep dip, the synthetic pyrethroids, will be environmental rather than on the animals themselves probably, but there is a major impact upon water quality of synthetic pyrethroids used in sheep dip.

1054. It is always difficult to know where to draw the line in these situations. How strongly do you feel about the position in the PSD? Is it something that causes you big concern or just marginal concern?

(*Mr Riley*) I think we would like it to be seen as an agency outside of MAFF. I think MAFF should deal with agriculture and food and that aspects of safety involved in the growing of food and the production of food should be outside of MAFF and that will make a very clear division for the public to be clear about and it will in the end benefit both the PSD and the agricultural industry.

Mr Mitchell

1055. The Advisory Committee on Pesticides said in its evidence to us that, "Applicants for pesticide approval must provide detailed scientific data on human and environmental safety, covering issues such as toxicity, operator exposure, residues, pesticide chemistry, environmental fate and behaviour, ecotoxicology and efficacy". Now, that sounds pretty comprehensive to me, so are you not satisfied with that or what else do you want?

(*Mr Riley*) Well, the first thing to be asked is whether the human health implications are wide enough. For instance, some of the pesticides that are on the market at the moment, and synthetic pyrethroids again, have been suggested to have endocrine-disrupting functions at very, very low concentrations and we have a large number of endocrines in our bodies, not all of which deal with the reproductive system, which is the one that gets in the papers, but the point is that we have to be sure that we are covering all the potential health risks and we are not absolutely certain that that is the case at

[Mr Mitchell *Cont*]

the moment. In terms of the wider environmental impact of pesticides, then we have serious concerns that the approvals that are given do not take into sufficient account the impact of those products on the whole food chain and that came up in the last question of the last session, I think, and it is a very important one, that if we actually remove all food plants from arable land by applying a broad-spectrum herbicide, then that has effects all the way down the food chain in terms of the numbers of species that are there and the numbers within those species.

1056. It still appears to be covering things comprehensively and it says that it critically assesses all of this stuff I have just listed and then it says that the evaluations made are one factor in considering its recommendations to ministers. Are you saying that you are not confident in the expertise and the impartiality of the ACP?

(*Mr Riley*) I think the way they apply what they do is probably first rate, but what we want to see is that expertise applied over the whole of the food chain, so we do not just concentrate on the toxic effects on insects and fungi and wild flowers, but also on the effects on the things that feed on those plants and fungi and interrelate with them within the environment. The farm ecosystem is extremely complex and if you knock out one part of it by applying a crude pesticide to a certain part of it, then it can disrupt the whole food chain quite dramatically and I think the work of the British Trust for Ornithology and the RSPB on bird numbers on farmland is indicative of the fact that we do have a problem here and we are not sure whether that is entirely due to pesticide use or whether it is due to habitat destruction, but we need to understand that problem before we plough on with the use of these rather broad-spectrum products.

1057. That is making the situation so complicated and so demanding that it is going to be unworkable. Now, I see that you are in favour of introducing a power of veto over pesticide approval. Now, that is going to complicate the whole process, is it not?

(*Mr Riley*) Well, I think if the Food Standards Agency is going to have any credibility with the public, then it has to be seen to be standing up for food safety, so if they are presented with data on the safety of a particular pesticide in food, then it would seem to me to be sensible that the Agency could step in and say, "Right, we either want to see more data or we do not want this product approved for this particular use".

1058. And that is for public health reasons?

(*Mr Riley*) Yes.

1059. And the Government could step in and do that?

(*Mr Riley*) Yes.

1060. Could I just move on to another position you have taken about chemically intensive farming. You say that lots of farmers want to get off the chemically intensive treadmill and I suppose, therefore, that you believe that less intensive farming would give us better levels of food safety for the consumer. Is that right, that you make that conclusion?

(*Mr Riley*) Yes, certainly.

1061. If there is a problem from chemically intensive farming in producing contaminated food from pesticides, do you have any evidence that it might also apply to microbial contamination?

(*Mr Riley*) I think there is a wealth of evidence to suggest that intensive livestock production has resulted in high levels of salmonella and campylobacter in poultry and E.coli in cattle and I think what we need to ask the new Food Standards Agency to do is to look at the reasons why we are getting such high levels of pathogens in our meat from the UK production and if they identify that the cause is actually, which we believe, associated with intensive farming, they need to be able to say to the Ministry of Agriculture, "You need to reform the management of these units so that we eliminate the chances of pathogenic contamination at source".

1062. Your assumption might mean that the cheaper the food, the greater the threat.

(*Mr Riley*) I think in the UK in the past three or four decades, there is an assumption that cheap food is good food and that may not be a very good assumption. I think there is a need for us to look at producing food of the highest quality which in some cases means that livestock may have to be managed more labour-intensively which probably will put the price up, but if we start looking at the costs of not doing that, then there are real benefits for society.

1063. Yes, but the argument is not that cheap food is good for you, and nobody is going to say that, but it is that that is what the consumer wants because we spend less on food in British budgets than they do in Europe and there is no evidence that people are prepared to pay more, is there?

(*Mr Riley*) I think that there is growing evidence that people are moving away from intensively produced food to extensively produced food.

1064. That is the middle class market.

(*Mr Riley*) It is at the moment, yes.

1065. The mass consumer is not prepared to pay more.

(*Mr Riley*) The mass consumer, in our experience, is very concerned about food issues, but if they have got a limited budget, then they do not have much choice, so I think what we have to do is to reform the production systems so that they are producing food of a high quality so that everybody can afford it.

1066. Yes, but more expensively. You are putting the prices up for the mass consumer because anything that is less intensive is going to be more expensive.

(*Mr Riley*) I think that is probably going to be true, but there are benefits to be had from that system in terms of saving on food poisoning and other medical effects associated with the use of intensive farming methods. Those calculations have not been done yet, so I think we should reserve judgment on that. We certainly know that the cost of individual food poisoning incidents is something in the region of £1,000 per case in terms of loss of working time and medical treatments, so there are real costs to be had if we actually reform the system and eliminate food standard problems at source.

[Mr Mitchell *Cont*]

1067. Just in passing, is there any evidence about the correlation between socio-economic status and the incidence of food poisoning?

(*Mr Riley*) I am not aware of any, but we actually have not looked into that yet, so I could not answer the question.

Chairman

1068. We had evidence last week from the Meat & Livestock Commission which seems to suggest that they were attacking intensive production methods for some of the same reasons you have been giving, but then when we pushed them on this, they pointed out, for example, that in extensive production methods, there were other dangers, such as, gulls' droppings causing large quantities of E.coli, so it is not necessarily the case, is it, that extensive production methods necessarily produce safer food?

(*Mr Riley*) I think every system of production has some sort of risk associated with it and if gulls' droppings in extensive poultry production becomes an issue, then we have to find some ways of dealing with that problem at source.

Mr Mitchell

1069. It will not be with intensive poultry practices because they will all be in big cages, so it is only if they are free range!

(*Mr Riley*) We have not done research on it, so I would not like to comment on it at the moment. Whatever system you adopt, it throws up problems and there is no such thing as a free lunch.

Chairman: A cheap lunch possibly!

Ms Keeble

1070. I was going to repeat some of the same evidence that we have heard, but that was, by and large, about livestock and about the risks of that and certainly quite a lot of the evidence has pointed towards that, but in terms of pesticides and health risks, what specific risks would you point to?

(*Mr Riley*) One of our main concerns is that the current system looks at individual levels within the food that we consume, so the individual level of a single pesticide, but in many cases there are multiple residues within that food. For instance, and I will just read from my figures here so that I get them right, in this year's report from the Working Party on Pesticide Residues it showed that about 90 per cent of the lettuces sampled actually had residues in them, but up to 60 per cent of those lettuces had two and three pesticide residues and the most recorded was actually one lettuce with five different pesticide residues, so the MRLs are set on the basis of single exposure to a single pesticide and we would like to see far more work done on dealing with this cocktail of pesticides which some consumers are faced with. It has to be remembered that work done by the Working Party on Pesticide Residues on carrots has found that there is also a huge difference between the pesticide residues within the sample, so if you take one carrot from a crate, it can have a huge difference between a neighbouring carrot merely because of the vagaries of applying the chemical in the field really.

1071. I take the point about that, but in the case of livestock, it was possible to point to people who had become ill as the end result, I suppose, of certain farming methods, the most spectacular one being BSE, but there are plenty of others as well. What examples can you point to of people becoming ill as a result of eating pesticide residues? I am not talking here about the impact on birdlife, and I quite appreciate that, nor the impact on people working with chemicals, which is also an issue I quite understand, but specifically about the food safety impact.

(*Mr Riley*) I think that apportioning blame to a particular exposure in food is very, very difficult because we are exposed to so many chemicals in our everyday life and the epidemiology of trying to pinpoint effect and cause due to chemical exposure is notoriously difficult and I do not know of anybody who has been able to do that satisfactorily. However, we know that these products are sprayed on our food and are potentially dangerous, and the figures from last year's Working Party report suggest that, for instance, about four out of ten of the samples of fresh fruit and vegetables that they took were contaminated with one or more pesticide residues, which means that six out of ten were not. Now then, why has that occurred? Is it because the farmers who grew those crops used different methods, they used a pesticide differently, they avoided using them or whatever? We need to be able to produce a farming system which produces a final product which is almost free of residues and that will give us the necessary safeguards that we need in order to eliminate pesticides from the potential threat to human health.

1072. Okay, but you are saying that on the basis of a generally held position that it is a bad thing for people to eat pesticides rather than pointing to the fact that people have suffered particular illnesses which can be traced back to eating pesticides in the way, for example, that you can link BSE and CJD.

(*Mr Riley*) I think it is very, very difficult to make those links.

1073. In terms of the genetically modified organisms and the use of genetically modified crops, would you accept that those would be a valid way of reducing the use of pesticides?

(*Mr Riley*) There is not any evidence that we know of that has been independently assessed that shows that that is the case over the long term. If you take one example of the engineering of BT or Bacillus Thuringiensis into the plants so that the plant becomes effectively an insecticide so that any bug eating it is killed, then our view is that that technology may well be effective for a short term, but we know from chemical pesticides that if you expose the pest population to enough of the pesticide, resistance develops and by engineering the insecticide into the crop, you are effectively exposing the pest for the whole of the life cycle of the crop, so we feel that resistance will develop quite quickly and, therefore, the tool which the organic farmer has developed as a way of more safely dealing with pest species will be lost to farming and particularly lost to organic farmers and that will be a serious blow to them.

[**Ms Keeble** *Cont*]

1074. I can understand some of the reservations that you have raised, but in your evidence you express qualms about the level of public debate, whereas in most of the evidence we have had here, people have been unable, despite all the misgivings, actually to identify food safety risks in GMOs and, in proportion to that, there has been huge public debate and I really wonder why you question the adequacy of the public debate.

(*Mr Riley*) If you look at public opinion in this country, we have the lowest knowledge about biotechnology of any country in Europe and I think the Sainsbury's poll last year showed that only 1.9 per cent of those polled knew anything about it or had heard about it, whereas up to 85/85 per cent were aware of the BSE problem.

1075. Sorry, but can you just repeat those figures because I did not hear them?

(*Mr Riley*) A Sainsbury's poll, an internal Sainsbury's poll, was carried out and it asked people which food crises they were aware of and biotechnology and genetic engineering came bottom of the league and less than 2 per cent of people were aware of it, whereas at the top of the league BSE was up to 85 per cent, I think, and I cannot remember the figures off the top of my head, but something of that order, so there is a very low level of public knowledge at the moment. From our experience of talking to people in the street, the people who know about it are concerned about it and the problem always is that we have to have bodies before anything is done about something and there are similar parallels to the BSE crisis within the genetic engineering development in that we are not sure about the toxins that could be produced by new genes, we are not sure about new allergens that could be produced, so if we actually rushed these products on to the market, we may actually be just causing-long-term food problems. I think all we are saying is that we must learn the lessons from this BSE crisis and proceed with caution and the onus should be on industry to answer these questions by having sufficiently long-term and rigorous research programmes which are independently vetted to enable us to come to a judgment.

1076. Would you argue than that simply food labelling, putting on the things that it contains, genetically modified organisms, is not enough on the basis that you are giving the public information that they cannot handle because they have not been told what the implications are? You are saying we have to take more rigorous steps in food?

(*Mr Riley*) Yes, I think we need to be better informed about the level of risk we are taking before we start taking the risk.

1077. Before you start labelling the food?

(*Mr Riley*) Before you release the food into the food chain.

Mr Hayes

1078. I do want to come back to pesticides and perhaps it is relevant to something Sally Keeble raised at the end. Why do people want to know about these things? I do not know anything about the civil engineering of a bridge which I use every day. I do not know anything much about medical technology which is used to potentially cure me and possibly save my life. I do not know anything about how the internal combustion engine works, but I drive one every day. Why do people want to know about these things and why should people know?

(*Mr Riley*) Because you have to have confidence in the bridge that you cross and the motorcar that you drive.

1079. It does not mean that you need to know how it was built.

(*Mr Riley*) I think if people do not have any knowledge at all, they do not feel any confidence at all in the technology. They have to have a certain level of knowledge of what is going on around them to be sure that what they are eating is safe and there is a significant difference between physical things and what we actually consume, I think, as well.

1080. But the point about pesticides is that you talk about four out of ten products that you have tested, or I was not quite sure who—

(*Mr Riley*) It is the Working Party on Pesticide Residues.

1081. I will take that as read, so four out of ten being effective, but it may well be that if you look at organic products, four out of ten or more of those products will be covered in all sorts of unpleasant things if they were analysed in fine detail and the findings were published, but when I go and take an organic apple and look at all the things that are on the skin because it has been handled by people, it has been processed, and I use that term not in the technical sense, but in the more general sense, by the time it gets to my mouth, it will contain all sorts of things. Is it not the analysis and the greater scrutiny which you may be contributing to which gives rise to fears, fears which perhaps if we had had the same level of analysis 50 years or 100 years ago would have been equally prevalent? It is not just pesticides, is it, but it is all sorts of things?

(*Mr Riley*) I think if we knew what we know about pesticides now when we first started, we would have proceeded with a lot more caution in their launching on to the market.

1082. Yes, but what I am saying to you is how much of this is about analysis and publicity, if you like, and how much of it is about real problems? Are not the real fears that are spread by scares over food as damaging or more damaging than the problems themselves and are you not contributing to that?

(*Mr Riley*) No, I think we are contributing to informing the public about what the issues are concerning intensive farming in this country.

1083. But plant breeding has been going on in this country for years and no one has known anything about it. The number of people who know anything about plant breeding, and I am talking about pre-GMO plant breeding, is minimal. No one knows anything about it and why should they need to know anything about it? I do not want to know anything about how the cereals were bred that produced the product that goes into my loaf of bread. Why do people want to know about it? Why do you think there is a burning desire for people to know about that?

[**Mr Hayes** *Cont*]

(*Mr Riley*) Because people make donations to our organisation because we are campaigning on it and I think that tells us that there is a significant number of people in the population who are worried about the issues.

1084. One final question, Chairman, and sorry to be perhaps so firm about this, but let us return just to the issue that the Chairman raised, which is this issue of the alternatives to intensive farming. He briefly mentioned this, but I want to press you on it in more detail. How much study have you done or how much study has been done on the risks to livestock, for example, free-range poultry, free-range pigs, if we take those two examples, from all sorts of factors and obviously threats and dangers, diseases, other pests which would not be the case in intensively produced animals?

(*Mr Riley*) There have been studies of extensively grazed livestock. I am not aware in detail of the results of those studies.

1085. And you have not done any research on that yourselves?

(*Mr Riley*) We have not done any research, no.

1086. Because I am very worried about free-range poultry and pigs and how they are detrimentally affected by all those problems which obviously you can understand.

(*Mr Riley*) As I said to the Chairman, every system you have has its own problems associated with it, but we believe on the evidence we have seen so far that, on balance, the extensive system offers more benefits both for the animals, human beings and the environment than the intensive system.

1087. A belief based on no actual study at the moment?

(*Mr Riley*) Well, I am not aware of any detailed studies of direct impacts on animal health, but from a direct observation of extensive systems, if you like, and I have kept free-range chickens as well, so I do know a bit about it.

1088. So have I.

(*Mr Riley*) Good.

Mr Hurst

1089. I am sure, Mr Riley, you will have enjoyed my colleague Mr Hayes' wonderful exposition of ignorance is bliss and we are all greatly assured by that, but if I can perhaps move on from that, you have advocated moving towards a zero tolerance for pesticide residues, but all the evidence seems to show, does it not, insofar as human health and safety is concerned, that in fact we can go way beyond those levels and it does us no harm? Why, therefore, should you seek to reduce the level when in fact the level at the moment is way on the right side of safety?

(*Mr Riley*) Well, because we are an environmental organisation and we have to look at the environmental health issues as well as the human health issues and the benefits in the environment of reducing pesticide usage are enormous, I think, in terms of the biodiversity of the countryside. There are lots of studies being carried out looking at wildlife on organic farms where no pesticides are used and there are clear increases in population and diversity. I know from my own experience from working on a piece of land in the Vale of Evesham that when it was managed organically, the biodiversity increased by leaps and bounds over ten years and it was quite astonishing.

1090. I do not know if you were here for the last questioning, but I am not unsympathetic to that view, but should you not be concentrating on the area where there may be a risk to wildlife and the environment, which is the one you have touched upon now, rather than in a way conjuring up nightmares which may not be there, those affecting human health?

(*Mr Riley*) As I said to Ms Keeble, linking the effects of pesticides to human illness is extremely difficult because we are exposed to a whole cocktail of chemicals from all sorts of sources in our everyday lives and it will probably never be shown which chemical causes which illness because we cannot isolate people from the chemicals that are in our environment now and it would not be particularly ethical to try and do so, I do not think, so there are real problems in establishing cause and effect between pesticide exposure and illness. Nevertheless, we know that these products are damaging to living creatures, that is what they are designed to do, the sole purpose of their being is to kill things, and we can, we know, produce food without risk using advanced techniques and that is what we are saying, so let us go for it. If we can do it, let us go for it.

Chairman

1091. I am delighted to learn that you have contributed to the biological diversity of my constituency in the Vale of Evesham, Mr Riley, I am very pleased about that, but it does seem to me that you are actually saying, perfectly honourably and fairly, that your primary concern about pesticides is their impact on the environment and you are not able to provide any quantification or justification of your concern about their impact on human health. Is that an unfair characterisation of what you are saying?

(*Mr Riley*) I think what I am saying is that it is very hard for me to furnish you with cast-iron evidence that this pesticide causes this disease in this population of human beings. There is an underlying concern with us that exposure to low-level chemicals across the spectrum poses long-term health risks to the population, but you are quite right to say that the impact of pesticides on biodiversity in the countryside is of equal importance to us.

1092. I suspect greater importance if you were being absolutely straightforward.

(*Mr Riley*) You can take that interpretation of what I have said if you want to.

1093. I was encouraged to begin with when I read one aspect of your evidence to us when you said this: "The major food retailers have encouraged a culture in which appearance of food seems to take precedence over the quality when deciding whether to buy. The new agency", the Food Standards Agency, "should also seek to re-educate the public so that they accept some blemishes as healthy and

[Chairman *Cont*]

wholesome rather than something to be avoided at all costs." Did you mean blemishes or do you mean assorted shapes?

(*Mr Riley*) Assorted shapes is fine by me. I think we waste a lot of food because we reject it on the grounds of size and shape, so I think people should be encouraged to eat small, knobbly apples.

1094. I think they are rather more attractive than the plastic-looking, round ones you get.

(*Mr Riley*) Yes, the shiny ones.

1095. But did you mean blemishes in your evidence? You used that word.

(*Mr Riley*) I think the odd piece of discoloration of the skin of an apple should not be taken by the public as something that is harmful and I think, because of the way fresh fruit and vegetables are presented in supermarkets, we have the idea that they have a particular colour and a particular sheen and they are blemish-free and there are no marks on an apple in a supermarket, or it is very rare, though in fact this year one or two Cox apples have slipped through the net because of the poor crop, but what we need to say to the public is that blemishes do not mean that there is anything wrong with what you are eating, but it actually means that maybe they have been sprayed less.

1096. Do you have any comparative data in Friends of the Earth on the risks from pesticides, particularly, say, fungicide residues and fungal toxins in damaged fruit and vegetables?

(*Mr Riley*) Not at the moment, no.

1097. I am advised that a blemish could have fungal toxins or some microbiological contamination and that would be more serious than any imaginable danger from a pesticide residue.

(*Mr Riley*) The difference between a pesticide residue and a blemish is that you can see the blemish and you can cut it out with a kitchen knife.

1098. So you would not advocate eating the blemish?

(*Mr Riley*) I do not particularly enjoy the flavour of mouldy apples myself, no.

Ms Keeble

1099. This is a slightly different argument from the ones you have dealt with previously, but one of the arguments about the use of pesticides and indeed GMOs is not just about dealing with the actual infections or otherwise in the foodstuffs, but it is also about crop yields and one of the arguments about that then goes to increasing yields, particularly of third world countries. I am sure you are familiar with those arguments. What point do you make about that?

(*Mr Riley*) Our two main points are that hunger in the third world is not really due to a shortage of high-yielding crops; it is to do with the way the food is distributed and available to those populations. Until we actually put those problems right, the introduction of high-priced, high-technology seeds into those economies will not actually benefit the people very much.

1100. But higher-yielding crops even if they are not genetically modified or crops which do not suffer from disease where certainly if there is no proven ill-health, which is what you have already said, or food safety risk as a result of pesticide residues, surely you cannot argue against using those?

(*Mr Riley*) If a genetically modified crop—

1101. Sorry, I am not talking about genetically modified, but I am talking about the use of pesticides. If it prevents disease in the crops and, therefore, produces food and there is no proven health risk, how can you seriously argue against their use?

(*Mr Riley*) Well, because I would find it hard, without looking at individual cases, to say that there was no proven health risk either to the people applying the chemicals or the people consuming the food or the people living near the fields where they are being sprayed, so what we need to do is to develop agriculture in developing countries along sustainable lines which are not dependent on the inputs from large agrochemical companies and it is quite possible to do that, especially with conventional plant breeding, enabling us to increase yields as has been done in this country.

Chairman

1102. I will ask you an open-ended question now to give you a chance to say what you think about the Food Standards Agency as it has been proposed by the Government. What is your overall feel for the way the Government has proposed that the Food Standards Agency should be structured?

(*Mr Riley*) I think we are encouraged by the White Paper and quite excited by the potential for the Food Standards Agency to put right many of the wrongs that have been highlighted this morning in the food chain. One disappointment to us, I think, has been that in the overriding principles set out in the White Paper, the precautionary principle did not come to the fore as sufficiently as we wanted it to have done. I think what we would like to see is the Agency adopting the stance whereby if there is insufficient scientific evidence to decide either way on a case, as there was in the BSE crisis, I think, at the beginning, then we should adopt the precautionary approach and say no until we have got enough evidence accumulated to make a reasoned, scientific judgment and then other factors will then come into play as to what decision was made obviously. I think underlying all the work of the Agency has to be this precautionary principle because the evidence in the last decade has been that if we take chances, then we can actually store up problems long term.

1103. But you are broadly satisfied with what the Government is proposing for the Food Standards Agency?

(*Mr Riley*) Yes.

1104. You have detailed quibbles.

(*Mr Riley*) Detailed quibbles, yes.

1105. But you are broadly satisfied?

(*Mr Riley*) Yes.

1106. There seems to be some proposal in what you are saying to us for the duplication in relation to food-borne diseases. You suggest in your

[**Chairman** *Cont*]

memorandum that inspection procedures should be carried out by local authorities and you say that staff from the regional offices of the new Agency should be responsible for monitoring pesticide residues in foods. Is that an overlap or is it an intentional double—

(*Mr Riley*) Sorry, but could you just read that again?

1107. I am quoting from section 12(g) of your evidence where you seem to be suggesting that local authorities and staff from the regional offices of the new Agency should have overlapping responsibilities.

(*Mr Riley*) I do not think we were. If it reads like that, then it is probably an error in drafting.

1108. Or in my understanding, which is equally possible.

(*Mr Riley*) I think what we are saying is that the local authorities should continue with their current roles in terms of hygiene inspection, but I think we are very keen to see the Agency develop high standards and if those standards fall behind what is expected in individual local authority areas, then for the Agency to be able to go in and shake things up so that the standards are brought up to what we have set. I think in the White Paper there is a bit of confusion about how we are going to monitor pesticide residues and I think it is very clear that we need, or I think it would be quite useful if the Food Standards Agency did actually monitor pesticide residues independently of the PSD and that local authorities—

1109. As well as the PSD?

(*Mr Riley*) Not as well as. I do not see much point in duplicating the work. If the Food Standards Agency can develop its own monitoring programme based on the experience of past years, then it would give the Agency a good overview of what was contaminating our food.

1110. But presumably you take the view that the Agency's first priority should be meat-borne contamination issues rather than vegetables?

(*Mr Riley*) I think that is what the public would demand, yes.

1111. Can I turn to the funding of the Agency? In your evidence, you seem to suggest that you think that the Agency should be entirely funded out of public taxation with no contribution from the industry. Is that your position?

(*Mr Riley*) Yes, I think we have got some concerns that we do need to have a completely independent organisation and I think the public, because of what has happened in the last decade or so, would support a wholly publicly-funded agency. There seems to be a good case for individual food processors to register as food processors and that licensing system would be beneficial so that the Agency can actually track and local authorities can track people who are involved in the food chain more effectively. However, I do not really think that that should be used as a major source of funding for the Agency. I think most of the funding should come from the public purse.

1112. Thank you, that is helpful. Moving on a bit within what is proposed by the Government, how do you propose the consumer interest should be represented within the Agency? There is some difficulty, is there not, in finding representative consumer groups, or do you think Friends of the Earth is the right group to be doing it?

(*Mr Riley*) Yes, it is a problem and it is a problem for us because we are a pressure group and so we cannot, I do not think, be seen to be getting into bed with the Government by joining their committees. However, we very much welcome the opportunity that the White Paper offers for consumer groups and environmental organisations, which may not be so political as Friends of the Earth are, to be able to join committees and put the view of the environmentalists and the view of consumers and hopefully to have majorities on these committees as well.

1113. It is a nice thought, but I must say I do find it very difficult in practice to identify the organisations that would serve this function, and I entirely agree with you, I have no problem with the principle of what you are saying, but it is the practice that worries me. Who is it? Whom do we ask?

(*Mr Riley*) I think it is very difficult for me to speak for other organisations. We know that the PSD put out a request last year or just after we took up our job for lay representation on their committees and produced the list of potential organisations. I think what could happen is that organisations could actually nominate individuals and it would be individuals rather than organisations represented because they seem to have an interest and a knowledge on the subject, and it may be that we need to identify, rather than organisations, champions of food quality which stand out and who have obviously got no other sort of axes to grind like we have. We are a pressure group primarily and our supporters would not really welcome us joining a committee, but an individual from either academia or the media to join a committee I think may be a way forward to resolving the problem you have identified.

1114. Perhaps there should be polls on the consumer programmes on the television and radio to choose a champion.

(*Mr Riley*) Yes, I think it is a particular problem to find somebody who suits everybody.

1115. Now, there are just two final points of evidence before we let you go. I was intrigued by one point where in section 12(l) you say that we should try to maintain access to fresh food from local shops and this could involve protecting these local outlets from closure. I think the growers in the Vale of Evesham, of which you spoke earlier, would say "Amen" to that, they would love that, but how do we achieve that?

(*Mr Riley*) There is some legislation in France, I forget the actual name of it, which does serve to try and protect local producers from competition from large retailers and I can supply details of that.

1116. Yes, if you could do that, it would be very interesting to see.

(*Mr Riley*) Yes, and I think we have to do a bit of lateral thinking here and there are areas in inner cities where it is extremely difficult to get hold of fresh fruit and vegetables and the people who live in those areas are the people probably who do need access to that type of food more than anybody else, so I think it is a problem that the Food Agency needs to grapple with,

[**Chairman** *Cont*]

but in the long term, investment in legislation if necessary or support for local shops could pay dividend in terms of health and growing children in the long term.

1117. And nutrition.

(*Mr Riley*) Yes, so I think you have to look at these short-term costs and long-term benefits really in these cases.

1118. Can I ask one last question and it is an important question about the evidence you have given us today and also more specifically in writing. You have put a lot of emphasis on the producers' responsibility, the farmer, the manufacturer, whoever it is, but I saw very little indeed in your evidence about the responsibility at the other end of the chain in the catering outlets, for example, and in the home. I think a lot of the evidence we have heard on this Committee would suggest that a lot of the problems actually stem from misuse of food products in the home and in catering establishments. Is it a view that Friends of the Earth share or do you think all the problems are soluble further back up the chain?

(*Mr Riley*) No, I think we concentrated on that end of the chain because that is where our interests lie and I think we would agree that poor standards of catering and poor standards of food storage exacerbate the problems which we have talked about this morning, so I think the Agency has to act right along the food chain by making it very clear that if you are sloppy in your procedures in the kitchen and in food storage, then you cannot hope to escape food poisoning.

1119. So if the Agency put a high priority on that aspect of its work, you would not be critical of it?

(*Mr Riley*) I think it is going to be very important that we do attack the problem at its source, but at the same time we have to deal with the immediate problems of food poisoning outbreaks and so I think probably, in an ideal world, they are going to have to do some sort of pincer movement from both ends of the chain.

1120. Unless my colleagues have any other questions or there is anything else you wish to say in conclusion?

(*Mr Riley*) No, thank you.

Chairman: In that case, Mr Riley, thank you very much indeed for your time and trouble. It is greatly appreciated.

Supplementary memorandum submitted by Friends of the Earth (C139)

RESPONSE TO REQUEST FOR INFORMATION FROM THE COMMITTEE

In answer to Question 1115 Friends of the Earth mentioned a piece of French legislation aimed at protecting local producers from competition with large retailers. Their written reply is as follows:

> France, Spain and Ireland have all introduced legislation to protect small producers and businesses.
>
> France has introduced three laws:
>
> "Loi Galland", introduced in January 1997, outlawed the sale of goods at less than cost price. This was intended to ensure that smaller producers and manufacturers were not being ignored by large retail groups.
>
> "Loi Royer", introduced in 1973, enabled local authorities to veto the construction of supermarkets over 1,000 square metres to protect neighbourhood food stores.
>
> "Loi Raffarin" extended "Loi Royer" in 1996 to require a public enquiry on any outlet exceeding 6,000 square metres.
>
> Spain introduced Regulation 7/1996 to regulate discount offers and the price system for basic goods.
>
> In Ireland legislation was introduced (the "groceries order") which made it illegal to sell below cost price although it is believed that this is not well enforced.

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HOUSE OF COMMONS

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AGRICULTURE COMMITTEE

FOOD SAFETY

MINUTES OF EVIDENCE

Tuesday 3 March 1998

FOOD AND DRINK FEDERATION
Mr John Wood and Mr Derrick Kilsby

CHILLED FOOD ASSOCIATION
Mr Keith Barber, Mr Joe Hattle and Miss Kaarin Goodburn

BRITISH MEAT MANUFACTURERS' ASSOCIATION
Mr David Walker, Mr William Jermey and Miss Jill Ardagh

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TUESDAY 3 MARCH 1998

Members present:

Mr Peter Luff, in the Chair

Mr Tom Collins	Ms Sally Keeble
Mr John Hayes	Mr Austin Mitchell
Mr Alan Hurst	Mrs Diana Organ

Memorandum submitted by the Food and Drink Federation (C43)

The Food and Drink Federation (FDF) is the voice of the UK food and drink manufacturing industry. This is the largest manufacturing sector in the UK accounting for 22 per cent of total purchases by consumers and buying and using 70 per cent of UK agricultural produce. The sector also employs approximately 500,000 people, over 11 per cent of total manufacturing employment and achieves a yearly gross output of more than £50b. FDF represents and promotes the industry's common interests by developing and implementing policies, information and education programmes on all aspects of food manufacturing from sourcing raw materials, to processing, packaging, labelling and distribution of its products to customers.

FDF welcomes the opportunity to submit evidence to the Committee's enquiry. The submission, set out below, has been divided so as to deal in turn with each of the issues identified in the Committee's Press Notice of 30 July 1997; it should be noted that references to "the industry" throughout this response relate to the food and drink manufacturing industry as represented by the Federation's membership, a summary of which is attached to this paper (Annex 1).

Recent trends in the incidence of bacterial food poisoning in the UK, and the effectiveness of the system of notifying cases of food poisoning.

Regarding recent trends in the incidence of food poisoning in the UK, FDF would look to organisations such as the PHLS to provide information on this, information which the industry needs in order to conduct a proper assessment of hazards based on HACCP principles and to target resources accordingly.

As far as the food processing industry is concerned, FDF members are fully committed to maintaining and, wherever possible, improving food safety procedures to ensure that consumers can continue to enjoy safe and wholesome foods with the greatest of confidence. This is evidenced by recognition by the industry that one of its guiding principles is that food safety is of primary importance. The industry is fully committed to taking all reasonable measures to maintain the highest practicable standards of food safety, both at the food and drink manufacturing stage and at all other stages of the food chain.

However, FDF would wish to stress that the industry is not generating pathogens as such but is having to deal with their potential presence in raw materials as a result of poor hygiene practices at the primary production stage of the food chain as well as the knock-on effect of poor hygiene in catering practice.

Although the industry is not considered to be a significant contributor to the current rising trend in food poisoning incidence, the food processing sector does need to have a better understanding of the reasons behind the current pattern of statistics. Currently it is only possible to speculate on a host of factors contributing to this general increase and to the emergence of new pathogens, such as Salmonella typhimurium DT104 and Escherichia coli 0157.

In the case of E coli, a number of reasons have been suggested for the increased incidence such as improved surveillance, changes in farming practices, widespread movement of cattle, large production lots, ability of the organism to establish itself in niches, use of antibiotics in feeds, increased use of animal slurry as fertiliser, mass production of ground beef and changes in eating habits (eg more eating out) coupled with poor hygiene in catering practice. It would appear that no single trend can be identified as the major contributing factor for the increase in prevalence of this pathogen.

Regarding the effectiveness of the current notification system, whilst it is not appropriate for FDF to comment on this, it does support any initiative that seeks to improve the statistical information currently available and to assist understanding of trends. In this respect, FDF looks forward to the results of the Department of Health's (DH) Study of Infectious Intestinal Diseases.

Significant gaps in current scientific understanding of, and statistical information on, food safety issues, and measures which could be taken to reduce these gaps.

The cost of printing these Minutes of Evidence is estimated by The Stationery Office at £1,080·00.

The industry has an important contribution to make to the overall understanding of food safety issues across the whole food chain. FDF members are therefore willing to share knowledge on food preservation systems and HACCP in order to reduce gaps in understanding in other parts of the chain. It is vitally important that a holistic "farm to fork" approach is taken, which must include both primary production and consumers at the two ends of the chain.

In terms of specific information requirements, FDF is aware of two key areas where third parties have made recommendations to Governments regarding high priority work. A recent consultation exercise by the WHO resulted in a Report on EHEC (Enterohaemorrhagic E coli)[1] which identified a number of research priorities with respect to these organisms.

In addition, the 1996 Report on the Sustainable Use of Soils, produced by the Royal Commission on Environmental Pollution,[2] also made significant recommendations including that the "Environment and Agricultural Departments" should "review immediately" the present legislation governing the spreading of wastes on land, with the aim of improving control and making regulation of the application of all wastes to land more consistent (para 6.79).

FDF would be grateful for information on the current status of these recommendations and any plans that have been made or actions taken for the recommended work to be progressed in the UK and/or EU.

Another key area where more information and guidance are urgently sought is that concerning the potential impact on the food industry of the water-borne parasitic protozoan, Cryptosporidium. Key issues here are:

- the current absence of consumer advice from the Chief Medical Officer regarding this organism;
- what, if any, HACCP-based measures would be appropriate for the water and food industries to take to further safeguard the consumer; and
- what changes should be made to the current notification system to enable it to be proactive.

FDF wishes to emphasise in particular the need to reduce gaps in current scientific understanding of food safety issues. FDF members take their role very seriously in this respect. For example, FDF has an R&D strategy for the industry which aims to advance understanding in the area of food and drink manufacture.[3] However, FDF considers that within the industry there exists a very high level of understanding of both the quantitative and qualitative fate of micro-organisms compared to some other stages of the chain. However, in order to conduct hazard analysis, it is critically important to have an equivalent level of scientific understanding across the entire chain, both in terms of the generation of knowledge in the first instance and its subsequent dissemination.

To assist in the development of more effective hazard analysis, FDF is also actively supporting current initiatives within the Codex Committee on Food Hygiene to develop principles and guidelines for the conduct of microbiological risk assessment.

Recent high profile food safety scares, such as BSE and E.coli 0157, have shown that there is a particularly urgent need to improve knowledge of farm and slaughterhouse practices at the primary production end of the chain and their impact upon the microbiological safety of raw ingredients supplied to downstream parts of the chain. Current gaps in understanding relating to this stage of the chain make it difficult for the industry fully to assess the risks posed by, for example, raw fruit and vegetables, which, in turn, makes it difficult for the industry to advise those sectors further downstream in the chain.

FDF's response to the recent Pennington Report[4] and to the James Report[5] on a proposed Food Standards Agency, as well as its consideration of the recent review of MAFF-funded bacterial food-borne zoonoses and meat hygiene research, have all highlighted the need for greater co-ordination between Government departments on policy and research issues relating to food safety in the interests of achieving an integrated "farm to fork" approach. Recent food safety issues such as BSE, E.coli 0157, Cryptosporidium and Cyclospora (in the US) have only served to highlight the urgency of this. Although FDF hopes that the proposed Food Standards Agency will play a major role in bringing about such an approach, this work cannot be delayed until the turn of the century when the Agency is formally established and that therefore some action needs to be taken now.

In its response to the Pennington Report, FDF identified the need for Government to give guidance to food businesses on infected food handlers in respect of E.coli 0157, in particular, how long a person who has suffered infection remains a carrier.

The level of food safety risk at all stages of the human food chain, including:

- *on farm (agricultural practices, including use of feedingstuffs, agrochemicals and veterinary medicines);*
- *in-transit (the transportation of live animals, meat, animal products and other agricultural produce);*
- *at slaughter (hygiene standards at abattoirs);*
- *in the food processing industry;*

- *in the food retail sector;*
- *in the catering industry; and*
- *in domestic households (including the adequacy of the provision of information to the general public on food safety matters through labelling and advice on the storage and preparation of food) and the appropriateness of the methods and resources employed to minimise food safety risk at various points of the food chain.*

FDF's commitment to minimising food safety risk both at the food processing and other stages of the chain can be demonstrated by the fact that:

- FDF members support the central recommendation in the Pennington Report concerning the implementation by all food businesses of the full set of seven HACCP principles as recognised by Codex consistent with the need for a preventive approach to food safety rather than reliance on end product testng based on microbiological standards;
- FDF actively contributes to the development of appropriate and enforceable legislation on matters relating to food safety;
- FDF participates in a wide range of initiatives relating to food safety as demonstration of its members' responsible attitude to this issue;
- FDF members make an important contribution to the overall knowledge base on food safety through their own very high level of understanding of food preservation systems and willingness to communicate this to other parts of the food chain; and
- the industry supports, through membership and active participation, the Research Associations whose activities have a strong bias towards food safety matters.

FDF has a management and committee structure which is able to demonstrate adherence to all of these commitments. Many of the member associations of FDF listed in Annex 1 are also taking individual initiatives in the area of food safety.

In particular, FDF emphasises that there is a joint responsibility between all parts of the chain including farmers, the food and drink manufacturing industry, distributors and retailers to work together to ensure the supply of safe, wholesome foods to the public. As has been stated previously, FDF fully supports an integrated and co-ordinated approach to the sharing of knowledge and information on food safety issues throughout the whole food chain.

As evidence of this, FDF has recommended to senior DH and MAFF officials, in the context of its response to the Pennington report, that Government establish a Steering Committee to oversee and manage policy and research issues related to E.coli O157, and which should include representation from the main stages of the food chain. FDF would emphasise that it is important that where such expert groups are established that they have had the appropriate balance of expertise, particularly in respect of food microbiology.

FDF has also made input into the Parliamentary Office of Science and Technology Report on Food Safety[6] and is pleased to note the acknowledgement made in the report of the importance of hygiene and temperature control. In its submission to the DoH on the Food Safety (Temperature Control) Regulations 1995,[7] FDF argued that 5°C should be the target operating temperature for the manufacture, distribution and storage of most chilled foods. FDF has also taken every opportunity since this consultation to reiterate this point to DoH.

FDF has also shown a commitment to food safety and consumer education through its foodlink initiative,[8, 9, 10, 11, 12, 13] organised by the Food and Drink Federation in association with the Chartered Institute of Environmental Health and the Royal Environmental Health Institute of Scotland. It is funded by the food and drink manufacturing industry and supported by the Department of Health, the Ministry of Agriculture, Fisheries and Food and the Department for Education and Employment. Individual companies and organisations with an interest in food safety and hygiene sponsor activities at both local and national levels. As part of the foodlink campaign, FDF has commissioned research to examine knowledge and behaviour relating to safe handling of food in the home.[14, 15, 16]

Aside from foodlink, there is the need for similar initiatives to provide additional educational support to businesses in various parts of the chain on food safety matters, particularly to address the issues raised by the Pennington Report, which, in turn, emphasises the need for departments such as the DfEE to work closely with other Government departments such as the DH. FDF's response to the Pennington Report identifies the importance of ensuring the presence of an adequate training infrastructure to assist businesses, particularly small and medium sized businesses, to implement HACCP principles. This is another area where FDF members, particularly the larger food manufacturers, have accumulated much experience and which they would be willing to share with businesses in other parts of the chain as part of any broader Government initiative.

A further example of FDF's commitment to improving knowledge of food safety in other parts of the chain is the recent decision by the Federation's Scientific and Regulatory Affairs Committee to establish a new scientific advisory group on the Environmental Aspects of Food Safety. This group will seek to improve current knowledge of agricultural practices in terms of their potential to impact upon the microbiological safety of fruit and vegetables, not only within the industry but also across the chain, through liaison with other organisations. This in turn will allow industry and Government to carry out a formal risk assessment, develop codes of good agricultural practice, assess future research needs etc.

FDF members are also involved in various research, product development and training activities.

Finally, FDF would wish to emphasise that its own members' commitment to reducing food safety risks at various points of the food chain cannot succeed through the efforts of this one sector alone but is fully dependent on all parts of the food chain working together, in conjunction with the relevant government departments, in a fully co-ordinated manner consistent with the holistic "farm to fork" approach.

Any food safety implications of the presence of genetically-modified organisms in the human food chain and the desirability and feasibility of labelling foodstuffs containing genetically modified organisms.

FDF supports the provisions of Regulation (EC) No 258/97 on Novel Foods and Novel Food Ingredients,[17] which lays down the procedures for the safety assessment of novel foods and novel food ingredients, as defined by the Regulation. The provisions, developed by the EU Scientific Committee for Food (SCF), owe much to the safety assessment procedures already in use in the UK for several years by the Advisory Committee on Novel Foods and Processes (ACNFP). FDF expects all of its members to abide by these community rules since these will provide the assurance that all genetically modified organisms (GMOs) are safe.

The Regulation also lays down minimum labelling requirements for foods produced using GMOs. As a result of concerns expressed by consumer and environmental groups on this matter and following the introduction to the UK of commodity crops grown in the USA and genetically modified (GM) to be herbicide tolerant and pest resistant, FDF has been involved in extensive discussions with the retail sector and the agrochemical companies responsible for these developments to develop practicable methods of informing the consumer about the use of modern biotechnology in the food supply chain.

The FDF public information campaign, foodfuture,[18] provides scientifically-based, balanced information on aspects of modern biotechnology, helping consumers to make informed decisions. FDF is concerned that calls for "blanket" labelling of all products produced from or containing GMOs, even when the end product is no different from its conventional counterpart, will not be helpful to consumers and will simply confuse. This is especially since a proliferation of labelling of the "may contain" type as suggested for products containing soya imported from the USA, will detract from the main purpose of labelling GM products, namely to signal a difference between the novel food or ingredient and its conventional counterpart.

A list of references to the various responses and documents cited in this submission is attached (Annex 2).

17 October 1997

Annex 1

Federation Membership

As at 1st January 1997

AMPM
The Association of Malt Products Manufacturers

BCCCA
The Biscuit, Cake, Chocolate & Confectionery Alliance

BMMA
British Meat Manufacturers' Association

BSDA
British Soft Drinks Association

CFA
Chilled Food Association Ltd

FA
The Food Association

FB
The Federation of Bakers

ICF
Ice Cream Federation

NABIM
The Incorporated National Association of British & Irish Millers

PFMA
The Pet Food Manufacturers' Association

SIBA
The Society of Independent Brewers

SB
The Sugar Bureau

SNACMA
Snack, Nut & Crisp Manufacturers' Association

UKAFFP
UK Association of Frozen Food Producers

THE FOLLOWING MEMBERS OPERATE OUT OF FEDERATION HOUSE:

ACFM
Association of Cereal Food Manufacturers Ltd

BATA
The Bakery Allied Traders' Association

BCMA
British Caramel Manufacturers' Association

BEMA
British Essence Manufacturers' Association

BFVCA
British Fruit & Vegetable Canners' Association

BOBMA
The British Oat & Barley Millers' Association

BPPA
British Pasta Products Association

BSCMA
British Soluble Coffee Manufacturers' Association

BSIA
British Starch Industry Association

CIMA
Cereal Ingredient Manufacturers' Association

DCMA
Dessert & Cake Mixes Association

FCA
Food Casings Association

FPMA
Fruit Preparation Manufacturers' Association

GPA
General Products Association

IDFA
Infant & Dietetic Foods Association

MSA
Margarine & Spreads Association

NACM
The National Association of Cider Makers

NEODA
The National Edible Oil Distributors' Association

PFPA
Prepared Fish Products Association

PPA
The Pototo Processors' Association

PPFA
Pre-Packed Flour Association

PSA
Pickles & Sauces Association

RA
The Rice Association

RGCA
Roast & Ground Coffee Association

SCOPA
Seed Crushers' and Oil Processors' Association

SGMA
Soup & Gravy Manufacturers' Association

SSA
Seasoning & Spice Association

TPA
Tea Packers' Association

UKAMBY
The UK Association of Manufacturers of Bakers' Yeast

UKPMA
UK Preserves Manufacturers' Association

VPA
Vegetable Protein Association

European Associations serviced by FDF:

ECIA
European Cereal Ingredients Association

ESA
European Spice Association

Annex 2

LIST OF REFERENCES

1 *Prevention and control of Enterohaemorraghic E coli infections:* Report of a WHO consultation, Geneva 21 April–1 May 1997. WHO/FSF/FOS/97.6.

2 *Sustainable use of soil.* Royal Commission on Environmental Pollution. London HMSO (Cm 3165).

3 *R&D Strategy for the food and drink manufacturing industry* (revised November 1995). FDF.

4 *FDF response to the Pennington Group Final Report and related research issues* (25/07/97). FDF.

5 *A Food Standards Agency—FDF response to the James Report* (13/06/97). FDF.

6 Parliamentary Office of Science and Technology: Draft Report—*Microbiological Food Safety: Trends and their implications, FDF comments* (20/08/97). FDF.

7 The Food Safety (Temperature Control) Regulations 1995—Letter of 29/08/95 addressed to Mr C Acton, DoH. FDF.

8 *The Fifth Foodlink National Food Safety Week, 9–15 June 1997.* FDF Flyer.

9 *The Sixth Foodlink National Food Safety Week, 8–14 June 1998.* FDF Flyer.

10 *The A to Z of Food Safety.* FDF booklet.

11 *Food Safety and Your Baby.* FDF Flyer.

12 *Food Safety and Your Barbecue.* FDF Flyer.

13 *Follow Frank's Fingertips for Clean Hands.* FDF Flyer.

14 *National Food Safety Report 1994* (24/05/94). FDF/CIEH/REHIS.

15 *National Food Safety Report 1995* (12/06/95). FDF/CIEH/REHIS.

16 *National Food Safety Report 1996* (10/06/96). FDF/REHIS.

17 *Regulation (EC) No. 258/97 of the European Parliament and of the Council of 27 January 1997 concerning novel foods and novel food ingredients.* Official Journal of the European Communities No. L43/1.

18 *Food for our Future—Food and Biotechnology* (revised 1997). FDF.

Examination of Witnesses

MR JOHN WOOD, Head of Scientific and Regulatory Affairs Division, and MR DERRICK KILSBY, Chairman of Food Hygiene sub-Committee, Food and Drink Federation, examined.

Chairman

1121. Mr Wood and Mr Kilsby, welcome to the Agriculture Committee. May I begin by asking you to introduce yourselves.

(*Mr Wood*) The Food and Drink Federation is the principal trade association for the food and drink manufacturing industry in the United Kingdom. As an association we have a secretariat, of which I am a member. I look after scientific and regulatory affairs. The Federation works through a series of committees, one of the most important of which is our Food Hygiene Committee, and my colleague, Derrick Kilsby, is the Chairman of that Committee. He is also the principal microbiologist of Unilever.

1122. Thank for that, and thank you for your written evidence which the Committee greatly appreciated. In that evidence you say that the United Kingdom food and drinks industry accounts for 22 per cent of the total purchases made by United Kingdom consumers. Clearly that puts quite an obligation on your members in respect of food safety and food products you provide. I wonder if you could tell us what in your opinion your responsibilities as an industry are—not the Federation but the industry—and how the FDF has sought to make sure that the industry lives up to those responsibilities: ie, about things such as the sourcing of raw materials, your processing, packaging, labelling procedures, and the food distribution technologies; what exactly that does in terms of food safety for the consumer.

(*Mr Wood*) Perhaps I should say that the Food and Drink Federation is one that is known as an umbrella trade association. We represent the common interests of 46 sectoral associations. Two of those associations, the Chilled Food Association and the British Meat Manufacturers' Association, are subsequent witnesses before you this morning, Chairman.

1123. We have noticed many common themes in your evidence.

(*Mr Wood*) Indeed. What we see as our principal role is representing that industry, and giving advice back to that industry. Perhaps I should make it very clear that we have no sanctions against our members. We do not monitor their own individual company standards of food safety, but we seek to co-ordinate their common interests in this area and to represent that interest to government and committees of this nature. Also, by the same token, we report back to the companies developments which we think are

[Chairman *Cont*]
important to the safety of the products which our member companies produce. We see food safety as one of our principal aims and objectives. We work as part of what we see as an integrated food chain, all the way from those who supply raw materials to the farming community, right the way through to the consumer who finally purchases the food product. We see responsibility for food safety as being shared equally along that food chain. We believe that we take our own responsibility within that chain extremely seriously. For example, companies within the industry will invest in their own research activities for their product development activities; basically seeking to ensure that the way in which they manage their food processing operations seeks to deliver products that are safe and of a quality that is required by consumers. Now, one important aspect of the way in which we manage that system—in particular, the way an individual company would manage it—is what is generally known these days as risk analysis and is very carefully linked with hazard analysis and critical control points. I would like to hand over to my colleague, Derrick Kilsby, to try to explain what we mean by risk analysis and hazard analysis.

1124. Can we come back to hazard analysis later on the agenda. We have a specific question to ask you on that. One of my colleagues wants to explore that in some detail. May I just make one point. I thought your evidence slightly smacked of passing the buck. You said: "The FDF wish to stress the industry is not generating pathogens as such but is having to deal with their potential presence in all materials as a result of poor hygiene practices at the primary production stage, as well as the knock-on effect of poor hygiene in catering practice." You could potentially do a lot of harm in your processing of food, could you not? I hope that is not meant to seem that you are complacent and that it is other people's problems.

(*Mr Wood*) Not at all, Chairman. We take our responsibilities very seriously, very carefully, very responsibly. What we are trying to do is to take raw materials—food, by its very nature, is perishable. If it is not looked after it will deteriorate and can become harmful. We see our role as essentially preserving those raw materials and turning them into a vast range of products. If you take peas as a common or garden example. You can buy peas in frozen, canned and dried form, or raw from your greengrocer. Those are different aspects of quality but all of those products are safe; what we really mean by underpinning our operations through food safety. If you look at a lot of the recent incidents which have caused consumer concern—salmonella, listeria, BSE, E coli O157—most of those problems have their origins in sectors of the food chain before, we believe, responsibility can properly be regarded to have passed to our industry. So, in that sense, we have to manage the quality and safety of our raw materials and make sure that the processes that we apply to them turn out those products in a safe and wholesome fashion.

1125. You see, the supermarkets would go one stage further than that. They would try to influence the primary production stage itself, and do so on a regular basis. Do your members take an active interest in farming practices or not?

(*Mr Wood*) Yes.

1126. Can you give us an example?

(*Mr Wood*) That is part of the overall approach to risk analysis and hazard which, with your permission, my colleague could explain.

1127. We will stick with that later. Your members do take an active interest in the primary production?

(*Mr Wood*) Yes. Another point worth bringing out is the fact that the Food and Drink Federation itself does not carry out any research but many of our member companies do. Many of the companies within the industry also rely on the research associations—Leatherhead, Campden and Chorleywood—who provide a technical support service right across the industry, from large companies to small companies.

Mr Mitchell

1128. You say that research is done into food safety issues. Have you any idea, can you tell us how much is spent and how it is spent on food safety issues research?

(*Mr Wood*) I do not have a breakdown of food safety research but in general terms the industry, as a whole, spends about £200 million a year on research and development.

1129. That will mean new product development?.

(*Mr Wood*) Some of it will be, yes.

1130. So you do not know how much is done. Can you illustrate how much is done on food safety research and who is doing it.

(*Mr Kilsby*) One of the things that we must remember is that an awful lot of the expertise in the food industry is do with the food process operations and the understanding of those. Therefore, it becomes very difficult for us to put a figure on that in general because a lot of that is engineering input; to do with the way in which we manage our manufacturing processes. It is not, in my knowledge, a situation where we can just divide out safety as an issue. It is very much tied up with development. If a company wants to move into ultra high temperature processing foods, safety is the key driving force for that move but, of course, so much of the input is tied up with the product development and engineering. The two cannot be divorced. The whole basis, the whole *raison d'etre* for the process is the food safety element, so it is the driving force throughout. There are, of course, many companies which do have specific food safety activities, and the food industry is a big partner with respect to research that goes on in the United Kingdom on food safety issues. It does an awful lot of that through the food Research Associations in the United Kingdom to which it subscribes to and in which it takes a very active part. Also, you will find that the food industry is very much involved with the United Kingdom government agencies on their programmes and helping with their programmes. If I might give a practical example. One of the big initiatives that the United Kingdom government introduced over recent years has been the food micro-model, which is a method of looking at food poisoning organisms; looking at their ecology and looking at the kinetics of how they grow, die, and survive in food products.

[**Mr Mitchell** *Cont*]

This is now a commercial package which the United Kingdom government has subscribed to and has helped to produce. That was led through United Kingdom government activity with the leading food Research Associations and the research institutes of the United Kingdom; very actively and with a lot of money and support from the food industry. We have all very much plugged in there for all of the food research which is happening in the United Kingdom.

1131. Taking the evidence that you have done some commissioned research through the Foodlink Campaign which you financed, to examine knowledge and behaviour relating to safe handling of food in the home—this is the food process, produced by members of the Federation—it is always my impression that most of the safety problems do arise in the home, from the way the food is treated by the consumer, like meat. What does that research show you about the balance of the problems; whether there are in the home or production?

(*Mr Wood*) What we try to do in our research is to find out the consumers' understanding of food safety messages. As I said earlier on, we believe that food safety is a shared responsibility. As you implied by your question, there is no point in the industry delivering perfectly safe food if it is then not looked after carefully. That is the message of our campaign. What we have done is some consumer research, to identify what consumers understood to be the appropriate way of dealing with food safety in the home. The results were quite interesting in that they showed that many consumers were aware of what they should be doing but, in fact, they were not doing what they should be doing in practice. One of the most alarming findings was the very small number of consumers who knew the correct temperatures, particularly for their domestic refrigerator and their freezer. Those findings, which were commissioned early on in the programme, in 1993, were really quite frightening. As a result of that, that led on to our Foodlink Campaign which really had four main messages: that temperature control of food is important, linked back to our research findings. That kitchens should be kept clean. People were aware they should be washing their hands but did not always remember to do so. Contamination of food should be avoided. Finally, that there should be no undue waiting between cooking food, storing it and serving it. What we were trying to do was to feed back to consumers the messages we got out of this research. To reinforce their knowledge through practice. This was really the aim of the whole campaign, which has been particularly successful and has been supported by government.

1132. So it is not a question of how far your messages about how to treat this particular product are getting through. It is a question of basic rules of hygiene in the home.

(*Mr Wood*) Yes, it is. Most foods which are perishable do, of course, contain storage instructions which are (hopefully) followed. It is the lack of understanding amongst the general public about the sheer perishability of food which is a concern here. Most people see packaged foodstuff and somehow assume that it will be stable for a long time. There is a lack of understanding in the way in which food deteriorates, and the way in which invisible micro-organisms can be transferred to food from dirty hands and dirty work surfaces and lead to food poisoning.

1133. You have a huge educational job on your hands there.

(*Mr Wood*) We hope that it will be a shared educational job. We obviously want to play our part in educating. Part of the Foodlink Campaign is to build partnerships, particularly with the Environmental Health Officers at the local level. We have been, frankly, very encouraged by the way that local Environmental Health Officers have used our material in giving presentations to local consumers' groups, in Women's Institute meetings, for example, or just in public libraries and shopping malls where they put on demonstrations.

1134. Just shifting back to your members, how far do you monitor, as a Federation, the incidence of contamination in production, in members? How far is that monitored?

(*Mr Wood*) As a Federation we do not undertake that type of monitoring. Some of our member associations, for example, the Chilled Food Association, have a more direct link with their members because they are sectorally organised. Maybe I could defer that particular question until my colleagues are before you.

1135. So that monitoring is up to them essentially, each manufacturer? You do not issue guidelines?

(*Mr Wood*) No, we do not.

Mrs Organ

1136. You have mentioned that one of the biggest problems you face is consumer ignorance about perishability of food; what happens to food. We tend to believe that food will last in its wonderful state for weeks and weeks. What are you doing about the fact that many of your members no doubt are developing food items, products, that will have long shelf lives. For instance, Tesco's are now working on a loaf which will last a week, because the pattern of consumer purchasing is that often people only want to go and purchase food on a weekly basis now. So your members are meeting that market, are they not, by making food last longer. Therefore, you are, in fact, undermining any knowledge that people might have about perishability of food, by trying to sell them products that last for ever.

(*Mr Wood*) What we would try to do in developing a new product like that, which would have a shelf life longer than a consumer might reasonably expect from a conventional product, would be to make clear that when the product is sold, information is given as to its shelf life, with any special storage instructions that might be required. Certainly, if the product might deteriorate and become harmful, it would be obliged to have a "use by" date on the label. Again, our research has shown that consumers do seem to understand the "use by" dates, but always seem to think that it will last just a little bit longer. Again, it is lack of familiarity with the research that goes into developing the product, and the work which is done

[**Mrs Organ** *Cont*]

to work out what a reasonable commercial shelf life would be and to reflect that on the date of the product label.

1137. But we are conning the public a bit, are we not, when we say that things like fresh sandwiches—which may have been made one day, distributed the next, and sat on a shelf for three days; the idea being they are only fresh because they are made from unprocessed materials—I do not know about you, but would you consider a sandwich the fourth day after it had been made to be fresh, because I would not consider that fresh. My argument is that in your industry, your members are constantly pushing the bounds at what is a normal food life. That is not helping.

(*Mr Wood*) I think my colleagues from the Chilled Food Association will probably comment better than I on sandwiches. The sandwich market has developed quite substantially because many consumers want to buy a sandwich which can contain a variety of interesting fillings. It is clearly marked with a "use by" date. Most consumers appreciate that those sandwiches would have to be made, at least the day before, in order to be delivered. It is the way in which the company manages the safety of those products and the chilled chain it has established—to ensure that those products are protected all the way from the point of production to the point of retail sale—that delivers a perfectly safe and wholesome and enjoyable product at the end of the day with a clear date mark on it.

Mr Mitchell

1138. The sandwich thing, which has led to a concentration of big sandwich producers rather than production in the shop, are there any statistics on the safety record of big mass-produced sandwiches like that which are distributed, because it all takes time. In fact, I am usually wakened up as I go home by vans arriving outside *Pret à Manger* and outside Boots with their sandwiches. Indeed, the sandwiches for *Pret à Manger* came last night in a security van! I am just joking there but the point is that you have big concentrations of production, long distribution lines, so the safety standards must be less adequate than production by the shop on the spot.

(*Mr Wood*) I would question that. The Chilled Food Association is one of the main sectors that does produce chilled sandwiches, and maybe your questions would be better directed to my colleagues who are going to follow because they have a lot of expertise in this area.

(*Mr Kilsby*) If I could make a general point about the issue you are raising. I do not see why a change in our practices should lead to an increase in safety concerns. It is the responsibility of the manufacturing industries to introduce these changes against a proper balanced and hopefully transparent method of looking at the risks and the hazards involved. It is the whole basis of how the food industry is now trying to run and to operate. If we move into a new technology—and let us please remember that historically the food industry has always done this in response to consumer demand—you only have to look at how many canned goods we have and how many cans we buy and why; and why we have dried foods and why we have frozen foods with very long shelf lives—I do not think the world has suddenly changed from the point of view of food technology which we are trying to develop to meet the demands; but we have procedures and methods that we are trying to promulgate through the food industry, so that when we do have the new technology we do still manage to maintain the high safety standards. We do all try to operate procedures and we do try to co-operate with all sectors of the food business and regulatory agencies to introduce those. I have to say that I do not believe that moving into a new food technology is an automatic signal that we have introduced new risks or new hazards. Indeed, it should be our responsibility not to do that. If we do have any changes, then what we are doing should be transparent and open and should, hopefully, with the help of the legislators, involve us in proper transparent and equitable methods of risk assessment, so that we can all see what we are doing.

1139. Rightly so. The industry cannot afford the risk. It is part of the general introduction to your presentation to us to say that the Federation is "fully committed to taking all reasonable measures to maintain the highest practicable standards of food safety." Can you define "reasonable measures" for us. It is such a vacuous and new-speak phrase. What is "reasonable" and what is the "highest practicable"?

(*Mr Kilsby*) We are now entering an area where all of us have to accept that it is critically important that we do all have transparent risk assessment procedures. When you talk about reasonable, I agree with you that it is not a well defined term. We have been struggling in the food industry for a long time, for a variety of reasons, on how to communicate risk. It would be foolish of me to suggest that the food industry is going to give the consumers zero risk. It is a constant problem for us as to how we struggle with, how we communicate the risk in a proper way. Indeed, we believe that we should be taking the highest precautions and delivering very safe products to the consumer, but no way would I sit here and claim that you can give 100 per cent security with respect to any food. Indeed, I would therefore say that we would be looking very much at risk on a risk analysis front; to work with different organisations and with yourselves in terms of how to define and how to work out exactly what we mean by that term "reasonable".

1140. Presumably, hopefully, the margins of risk are narrowing rather than widening. I was worried when you said earlier that you would have to assess the margin of risk on new processing and the increasing longevity of the food products before they reached the consumer, but that you were going to relax the margins of risk. The effort is presumably to narrow them all the time.

(*Mr Kilsby*) I am trying hard not to talk about HACCP because we think a question is coming up later. The principle we work on in the food industry now, and we try to promulgate throughout the food industry, is one of prevention and controlling the critical areas that lead to the risk rather than estimating the probabilities of failure. So instead of talking about situations of where failure might be, we concentrate our effort into putting in the controls

[Mr Mitchell *Cont*]
and making sure that those controls are always adequately taken, so that we can deliver safety. We do not, in the food industry, sit there and talk about it being okay to poison a certain amount of people. The discussion is all based around HACCP but I have been trying to avoid talking about it.

Mrs Organ

1141. Obviously you support it, as we can tell from your eagerness to talk about it, and this shows in your response to Pennington's Report. I wonder if you can tell us approximately what percentage of your membership has implemented the full set of the seven HACCP principles that were flagged up in that report. Is there any means of monitoring the effectiveness of the HACCP system on a central basis within your industry?

(*Mr Kilsby*) First of all, in answer to your first question I would not know the answer to that question, although I am very confident that it is true of the overwhelming majority of the members, but I cannot answer the question because I do not have the information. We do, of course, absolutely buy into the seven principles. We have been in the forefront of developing what that means in practice, so we have an absolute commitment to that. Indeed, I can only talk about the FDF attitude, but we would like to see all of these seven principles being fully incorporated across all of the food chain completely.

1142. When you say you do not know, is that because you are not looking at how many of your members are implementing the full set? You are not eliciting that information from them, or do you not know now?

(*Mr Kilsby*) I have not asked.

1143. Would you not think it would be necessary that you do start to monitor how many of your members—? If you are so committed about the necessary steps that need to be taken in HACCP, and that we need to have this principle in place, part of your role might be to start to ask your membership how many are well on the way, how many are there, how many are keeping up with it? That you are monitoring the effectiveness throughout your industry. That seems logical, does it not?

(*Mr Wood*) We do not do that as an umbrella trade association because we have 46 sectoral associations in membership. It would be logistically impossible for us to survey all of the companies that fall within the ambit of the FDF membership. But some of our member associations do take a more active involvement in what their individual companies do. The Chilled Food Association is a good example of that. What we are trying to do through companies which are in membership of the FDF and the Food Research Associations, is to encourage them to take up the seven principles of HACCP. In a sense it is in their own interest to institute management procedures that embody those HACCP principles into the law. To meet their legal obligations, they have to introduce a HACCP type system under the General Food Hygiene Directive.

(*Mr Kilsby*) Perhaps if I can make one point on that, we must remember that it is part of the Codes of Practice for Environmental Health officers, operating under the Food Safety Act, to look at the HACCP procedures in all of the companies. If we wanted to know the statistics, I would suggest that they are the people to ask because they are the people who are checking. Indeed, no food manufacturer should be operating without having implemented these. The people who formally are charged with checking that and have Codes of Practice indicating how they should do that are the Environmental Health inspectors.

1144. Granted they are there to monitor it. However, warm words and encouragement is one thing but as a Federation, if you are going to have any real status within your industry, you do not see that it is necessary for you to take a more positive active role in this? We have had a rising incidence of food poisoning. It is all very well for you in some of your statements, as the Chairman said earlier, to have a rather complacent attitude—it is not for us, Guv, it is further up the chain"—but one thing you need to do, surely, is to be secure about your section in the food chain? Just encouraging people that this is a jolly good idea, I would have thought again, is a little complacent. You do not think so?

(*Mr Wood*) We have not reached that conclusion, no.

Mrs Organ : Okay.

Chairman

1145. May I ask a question of detail. Does your Foodlink Campaign include the provision of food thermometers?

(*Mr Wood*) Yes.

1146. What is the mechanism for that?

(*Mr Wood*) The mechanism is that all the material, the literature and the hardware like fridge thermometers, are available from a central resource. They are available to local Environmental Health Officers. So local Environmental Health Departments can purchase a number of fridge thermometers and make those available locally on whatever basis they wish.

1147. So the consumer could get in touch with their local Environment Health department?

(*Mr Wood*) Yes.

1148. How many have been distributed now?

(*Mr Wood*) I am sorry, I do not have a figure but I could let you have those. Each year we have an annual Food Safety Awareness Week, normally in June, at the height of the barbecue season. Throughout the nation we try to co-ordinate a lot of local activities focused on food safety messages. Last year it was a message on washing hands, particularly for young children. This coming year it will be focused on temperature controls. Then each local authority can make its own local presentations, lecturing and so on, using the booklets, the material. I have some booklets here which I am happy to leave with the Clerk for you to look at.

Chairman: Thank you. Mr Collins.

Mr Collins

1149. You say in your evidence, gentlemen, that the industry has an important contribution to make to the overall standard of food safety issues across the whole food chain. You say that your members are therefore willing to share knowledge on food preservation systems in HACCP in order to reduce gaps in understanding in other parts of the chain. Could you develop that a little bit. Could you tell us what groups you have yourself contacted—primary producers or consumers or others—in order to offer this knowledge which you say you are willing to share?

(*Mr Kilsby*) We are very active on many of these food safety areas: whether it be on HACCP; whether it be on GMPs; whether it be on any of the emerging safety issues on food in all sectors, wherever they are. We are totally open about that and we do indeed, as a Federation, have regular meetings with different groups and different interests on those areas. Particularly an area there, which is very interesting one, which you raise, is the issue of how do we get the messages over, and help everybody in the food chain to be able to operate with the appropriate procedures? Also, taking into account that they have very different needs on occasion: for example, very small organisations we know do not necessarily have the technical strength to be able to generate all of their own concepts and systems. This is of particular concern to us because we are, at the moment, not in a position where we understand how to become fully engaged on that; yet as a Federation we would very much like to be partners in helping all people to be able to get on board with techniques and attitudes towards food safety. We would, therefore, make a point specifically that notwithstanding all the communications and contacts that we have with different organisations, we still have a problem in that we would like to be involved more in helping smaller operations and companies also to meet the standards that we should all share and believe are the ones we should have for food.

1150. That is very interesting. You seem to be indicating you have identified a problem and you would like to contribute a solution towards it but, at the moment, you feel that you are not entirely sure of the way forward yourself. Can you see a way in which you might develop a leadership role for the Federation or are you waiting for others, perhaps in government or outside, to give a lead which enables you to follow, together with other groups?

(*Mr Kilsby*) Personally, I think the situation there is that where we have seen through the Food Safety Act—the discussion and debate about small manufacturing enterprises, SMEs—we have seen, therefore, a lead being taken so far by the government in terms of how to deal with that. You can see that in the Codes of Practice for the Environmental Health Officers. From where I sit, I see that we would very much like to be able to work with government to help transfer, if you like, our knowledge and expertise over to those people, to help them to achieve necessary safety procedures.

1151. So just in terms of any plans for collaborative action, at the moment, apart from anything that you have mentioned which has been going on for some time, you are really waiting for government to give a lead, is that right?

(*Mr Kilsby*) Yes. In the meantime we are not just doing nothing. We are very much involved, especially through organisations like the Food Research Association in this country, very positively contributing towards helping to produce the documents and, in many cases, taking the lead on things like HACCP and how to operate food safety procedures, attitudes on food safety standards. If you look around at the way those activities are carried out through research associations, you will find a very high representation of commitment from Food and Drink Federation members to those activities. But in answer to your questions specifically: yes, we are not at the moment engaged with the small manufacturing enterprises. I personally would not know how to go about this.

Mrs Organ

1152. May I come on to labelling. You have said that you are not happy about the labelling of genetically modified foods being there for the consumer because you do not think it would be helpful and could actually confuse them. I have to say it is a little bit patronising. I would say to politicians and food suppliers: beware, never underestimate the intelligence of the consumer. Surely it can be overcome with clear design that you have at your disposal, so that the consumers do have the relevant facts when they are buying products? Is that not a right of the consumer?

(*Mr Wood*) What we are looking for, in terms of any labelling, is labelling which is meaningful, understandable, practical and enforceable. If we look at modern biotechnology, we have supported the concept of a European Regulation that would deal with the safety evaluation of all novel foods, not just those of modern biotechnology, and one that includes any supplementary labelling provisions where they are deemed to be appropriate. That came into being just a year or so ago, the European Novel Foods Regulation. This lays down when supplementary labelling requirements are to be required. The problem that we face at the moment—and I use the word "problem" carefully—is that we are looking at genetic modified soya in particular. This is a commodity crop which is not grown in this country. It is not grown in Europe. It is grown in North America and South America. North America produces roughly 60 million tonnes a year. Less than half a per cent of their harvest is exported to the United Kingdom so we are a minority purchaser of that material. When that product was approved, from a safety point of view and from a marketing point of view, in the States, there was no requirement to segregate. There was no requirement to label. Our view is that under the terms of the European legislation, any reasonable difference in terms of composition, nutrient content or use, would be a labelling requirement. When we are looking at soya, to all extents and purposes there is no difference between a product that is derived from conventional

[**Mrs Organ** *Cont*]
soya and one that is derived from genetically modified soya, so we do not feel that labelling is required. However, in order to respond to consumer requirements for further information, we decided that we would try and come up with a practical scheme. Therefore, in the November of last year, we announced jointly with United Kingdom retailers—and there are similar activities in other European Member States—a scheme whereby the protein derivatives of GM soya would be voluntarily labelled as being of GM origin. That system relies upon your being able to trace back your raw material supplies. So the scheme we have introduced essentially requires any products purchased on the open commodity market to carry a GM label. Companies within FDF and the United Kingdom retail sector are starting to introduce labels to that extent at the moment. However, at the political level there is still no agreement on European legislation on GM labelling. We hope that our voluntary scheme will be sufficiently acceptable to the legislators to form the basis of European legislation but we do not know yet. That is what we have done in trying to meet, as you have pointed out, consumer requirements for further information on genetically modified ingredients. I hope that is helpful.

1153. And this voluntary practice for the other products, is that a little symbol, is it a tiny little line right at the bottom which says, "This product has genetically modified food in it"? How are people, when they are picking up a product, to know? Is there a symbol like a vegetarian symbol, or a wheat symbol, or a skull and cross bones or whatever?

(*Mr Wood*) We are not keen on the skull and cross bones! What we have suggested is that the ingredient itself is qualified as a product of genetic modification or described as genetically modified soya in the list of ingredients, or there is an asterisk in the ingredients list, linked to a supplementary declaration in the same print size at the end of the ingredient list. We have suggested a choice of words according to the particular product, but essentially there will be an indication in the ingredients list that this particular ingredient is produced with genetically modified soya.

Chairman

1154. That does seem to conflict with the evidence you gave this Committee in October, which suggests that you were not able to do this. So you had second thoughts after you submitted your evidence to us?

(*Mr Wood*) Why we changed our view was that in 1996 there was approximately 1 to 2 per cent of the North American crop of GM origin. Last year it rose to 15 per cent. We felt that was a significant increase. Therefore, as last year's harvest starts to be used in food and drink products on sale in the United Kingdom, this new labelling scheme will apply.

1155. This is a very important clarification development from the evidence you gave the Committee. I appreciate that was some five or six months ago. Perhaps you could let us have the documentation about some of the rules and regulations you have set down for this scheme?

(*Mr Wood*) Certainly, Chairman.

1156. We would be very grateful for this. At the end of this session, can we look briefly at the White paper. In your response to the James Report on the Food Standards Agency, you said that the Agency's independence "would be compromised if it assumed responsibility for policy decisions" or law making. I do not quite understand the logic of that statement. Can you explain what you meant.

(*Mr Wood*) I would rather bring the Committee up-to-date with our current views.

1157. Ah, changed again!

(*Mr Wood*) We now have the benefit of seeing the Government's White Paper which was published in January. This answered many of the questions that we raised at that very early stage of the debate. So let me make it very clear that we fully support the Government endeavours to restore public confidence in food safety, particularly the administrative arrangements which are there. In response to Mr Collins' remark, we see the Agency as a sea change in the way that food safety is dealt with in the United Kingdom. We feel we have a contribution to make from the experience and knowledge we have. We hope very much that the Agency will be able to take account of all the different views and requirements all along the food chain; therefore, focus specifically on the microbiological and chemical safety of food all the way along the food chain. That is our firm view now and I hope that has clarified our earlier misgivings.

1158. I do not want to push you too much from your earlier response. Is there a new written version of the FDF's view on publishing a response to the Government's consultation?

(*Mr Wood*) We will certainly be responding, Chairman. I am a little bit inhibited in that our Council meets on Thursday of this week to approve the final response. Certainly after Thursday's meeting I will be delighted to send you a copy.

1159. We will not tour round the whole waterfront, but let us push you on to two issues, I on one and Mr Mitchell on another. Nutrition. In or out?

(*Mr Wood*) Out.

1160. That is your very firm view, despite what the White Paper says?

(*Mr Wood*) Yes.

Mr Mitchell

1161. Why?

(*Mr Wood*) We feel that the real concern amongst members of the public is with the microbiological and chemical safety of food. That is the issue which needs to be addressed. Every single food product on sale in any retail outlet needs to be safe for consumption. We think that diet is a matter of personal choice. Any food that is safe is acceptable as part of a healthy diet. We believe that the aspirations and aims of the Agency would be confused if nutrition were also part of its remit. Therefore, we maintain the view that we made in response to the James Report. The Agency should focus on food safety in terms of microbiological and chemical safety. It should, in very simple terms, be concerned with facts about food. We accept that it can deal with the nutritient content of food – those are facts about

[**Mr Mitchell** *Cont*]

food—but it should not stray into the areas of giving the public advice about what they should be eating. We believe that this is part of the broader issue of public health and lifestyle, and that diet and public health should be dealt with globally by the Department of Health.

1162. That sounds a bit paranoid on your part. It sounds to me like you have a fear that it is going to be going out buying fresh food and not processed food.

(*Mr Wood*) We are reassured by Ministers' remarks that the Agency will not be telling people what to eat but we still feel that food safety, as we define it, is the real priority. We do not think the Agency should be detracted from addressing the real issue of food safety.

1163. You are happy that nutritional advice should be given by the Department of Health and associated organisations?

(*Mr Wood*) Yes. We are not suggesting the public should not receive information about what makes a healthy diet, what types of food product are appropriate, but we feel that should be the broader responsibility of the Department of Health in a sense as set out in the Green Paper "Our Healthier Nation" which talks about putting diet and health and physical activity into the broader perspective of lifestyle.

1164. What about paying for the Agency? What are your views on a levy on the industry to pay for the setting up?

(*Mr Wood*) You will not be surprised that we do not want a tax on food. We feel that public health should be publicly funded.

1165. A one-off levy would not be a tax on food?

(*Mr Wood*) A one-off levy was introduced to pay for the Napoleonic Wars and that resulted in—

Mrs Organ: Such a good idea.

Mr Mitchell

1166. Are you arguing for this on principle grounds or just because you do not want to pay any more?

(*Mr Wood*) We feel it is a matter of principle that public health should be publicly funded and do not feel that there should be a levy placed upon the food industry to raise revenue.

1167. Thank you.

(*Mr Wood*) It is as simple as that.

Chairman: Mr Collins has a small point.

Mr Collins

1168. Would you hope and expect that your industry, if not your Federation, will be represented on the Agency?

(*Mr Wood*) We would not expect the Federation to be represented as such on the Agency. We see the Commission and the Chairman as being independent of any sectoral point of view but we do feel that those 12/13 people who make up the Commission should be widely drawn and represent expertise right across the food chain. We do believe that it is vital that one or two members of the Commission have direct experience of commercial activities in the food manufacturing sector but we do not believe that that person or persons should formally represent the food and drink industry.

Chairman: Well, we have accused you among other things of paranoia and complacency this morning. You have borne our slings and arrows with great humour, thank you very much for your evidence. We are very grateful.

Supplementary Memorandum submitted by the Food and Drink Federation (C137)

I very much hope that Derrick Kilsby and I were able to assist the Committee with its deliberations. During the course of the discussion, a number of points were identified where we were asked to provide further information, as you have kindly confirmed in your letter.

1. FOODLINK

The Chairman asked for an indication of the number of fridge thermometers which had been distributed during the course of this consumer information programme and I undertook to make copies of the programme's literature available.

The attached note (Document 1 [*not printed*]) summarises the programme and includes a table showing the approximate quantities of materials which have been distributed to date; some 40,000 fridge thermometers have been distributed to date.

A full set of the currently available material is enclosed [*not printed*], comprising:

- National Food Safety Week leaflet.
- The A-Z of Food Safety.
- Food Safety and Your Barbecue.
- Food Safety and Your Baby.
- Follow Franks' Fingertips for Clean Hands.
- Foodlink National Food Safety Report 1996.

2. LABELLING OF GENETICALLY MODIFIED FOODS

I enclose (Document 2 [*not printed*]) the FDF Press Release of 20 November 1997, setting out the basis of the announcement which FDF made jointly with UK retailers on that day. I am also enclosing (Document 3 [*not printed*]) the supplementary note which was circulated to FDF members on 19 December, following the meeting of the Standing Committee on Foodstuffs the previous day, when it had become evident that formal agreement on EU labelling rules would not be secured by the end of the year; effectively the trigger for the voluntary labelling scheme.

3. FOOD STANDARDS AGENCY

In view of the Committee's considerable interest in FDF's stance on the Government's White Paper, I enclose (Document 4 [*not printed*]) FDF's formal response to the White Paper.

I hope you find these documents of interest and help, but let me know if we can be of any further assistance to the Committee.

13 March 1998

Memorandum submitted by the Chilled Food Association (C33)

The Chilled Food Association (CFA) was established in 1989 with a mission to formulate, develop and maintain common, high standards of safety and quality in the production and distribution of chilled prepared foods. The Association has developed benchmark standards for the industry, the CFA *Guidelines for Good Hygienic Practice in the Manufacture of Chilled Foods* and supplementary guidance, copies of which are enclosed. The *Guidelines* are endorsed by major retailers including Marks & Spencer, Tesco, J Sainsbury, Safeway and Waitrose, and take forward standards set out in the European Chilled Food Federation Guidelines, the development of which we played a major role.

CFA represents manufacturers of chilled prepared foods, ranging from prepared produce, dry and dressed salads, sandwiches, delicatessen products, recipe dishes, pizza, pasta, soups and sauces, dips and dressings, and desserts. The combined turnover of our membership is approximately £1 billion. CFA is a member association of the Food & Drink Federation (FDF).

CFA's comments on the particular issues identified in the Committee's press notice of 30 July 1997 are as follows:

Recent trends in the incidence of bacterial food poisoning in the UK, and the effectiveness of the system of notifying cases of food poisoning

CFA looks to the PHLS and similar organisations to produce information which would enable the industry to more easily identify the root causes of food poisoning thereby enabling the industry to conduct proper risk assessment and target resources accordingly.

Significant gaps in current scientific understanding of, and statistical information on, food safety issues, and measures which could be taken to reduce these gaps

Food safety is inextricably linked to agricultural and environmental practices. The safety of the food supply chain relies upon good understanding of the effects of these practices and their management using HACCP. CFA has, since its establishment, required its Members to implement HACCP.

CFA members are fully committed to the need for the whole of the food supply chain to share knowledge on agricultural and environmental practices and their impact on food safety, food preservation systems and HACCP. CFA strongly believes that a holistic approach must be taken, which must include the application of HACCP principles to the production of the industry's raw materials by the agricultural and farming sector. However, in order to conduct hazard analysis, it is critical there there is an appropriate level of scientific understanding throughout the whole of the food supply chain. Current gaps in understanding relating to this stage of the chain can make it difficult for the food industry to assess and manage fully the risks posed by agricultural materials. Produce to be eaten raw, for example, does not easily lend itself to decontamination.

In terms of specific information requirements, we are aware of two key areas where third parties have made recommendations to Governments regarding high priority work. A recent consultation exercise by the WHO resulted in a Report on EHEC (Enterohaemorrhagic *E.* coli) identified a number of research priorities with respect to these organisms. A copy of the relevant section of the Report is enclosed [not printed].

The 1996 Report on the Sustainable Use of Soils produced by the Royal Commission on Environmental Pollution also made significant recommendations including that the "Environment and Agriculture Departments" should "review immediately" the present legislation governing the spreading of wastes on land, with the aim of improving control and making regulation of the application of all wastes to land more consistent (para 6.79).

We would be grateful for information on the current status of these recommendations and any plans that have been made for actions taken for the recommended work to be progressed in the UK and/or EU.

Another key area where information and guidance are urgently sought is that concerning the potential impact of *Cryptosporidium* on the food industry. Key issues here are:

- the current absence of consumer advice from the Chief Medical Officer regarding this organism;
- what, if any, HACCP-based measures would be appropriate for the water and food industries to take to further safeguard the consumer; and
- what changes should be made to the current notification system to enable it to be proactive.

Regarding food safety strategy, we strongly believe that the much talked about "farm to fork" approach must be transparent and manifested in the following way in the UK and EU as a whole:

1. the development of a holistic policy for the environment, agriculture and the food supply chain;
2. the development of a cohesive research strategy, allocating key elements to appropriate centres of excellence with appropriate funding;
3. the application of integrated policy at national, regional and local level; and
4. the management and dissemination of research data to relevant bodies.

We would hope that the proposed Food Standards Agency will play a major role in bringing about such an approach, but wish to stress that this work cannot be delayed until the Agency is formally established at the turn of the century.

The level of food safety risk at all stages of the human food chain

As far as the chilled food manufacturing industry is concerned, the continued success of the sector is wholly dependent on maintaining consumer confidence through product safety. CFA plays an important role in the industry by pressing for the highest standards of practice, ie hygiene and temperature control, throughout the chain. We are pleased to note that the forthcoming POST report on food safety recognises the importance of these points.

Regarding temperature control, the Association takes the view that chilled prepared foods should be distributed and stored at a target of 5°C. Through FDF's Foodlink food safety awareness activity, we provide refrigerator thermometers to consumers and environmental health departments to assist them in recognising and promoting the importance of proper temperature control in domestic refrigerators.

We would be supportive of similar food safety awareness and educational initiatives aimed at assisting other parts of the food supply chain. Regarding the chilled food manufacturing sector, we recognise that CFA can provide much technical support and assistance to SMEs in particular. We seek to further develop our membership in terms of this group of companies as it is particularly important for the future of the industry that such businesses, which may not be technically well-resourced, do not encounter food safety problems.

16 October 1997

Examination of Witnesses

MR KEITH BARBER, Chairman, MR JOE HATTLE, Immediate Past Technical Committee Chairman, and MISS KAARIN GOODBURN, Secretary General, Chilled Food Association, examined.

Chairman

1169. Mr Barber, welcome to you and your colleagues. Thank you for your written evidence which we appreciate. I wonder if you might introduce yourself and your colleagues for the Committee.

(*Mr Barber*) Thank you, Mr Chairman. My name is Keith Barber. I am the Chairman of the Chilled Food Association. To my right is Kaarin Goodburn who is the Secretary General of the Association and to my left is Joe Hattle who is the past Technical Chairman of the Chilled Food Association.

1170. Can I just ask a very general question first of all for the record. When was the Chilled Food Association established? What relationship do you have with the FDF? How many members do you have and what proportion do you think that represents of the industry?

[**Chairman** *Cont*]

(*Mr Barber*) Right. We were established in 1989 and really we came together to develop and maintain the standards for chilled food. We are beneath the umbrella of the FDF and we represent, we believe, about 80 per cent of chilled food production in the UK.

1171. Eighty?

(*Mr Barber*) Yes, 80. We supply the major retailers, Marks & Spencer, Tesco, Sainsbury, Safeway, Asda with own label products mostly. We have companies of varying sizes from small companies through to large multinationals. The combined turnover is about one billion pounds. We employ around 23,000 people and quite a lot of those, 700 we believe, are scientists.

1172. What sort of people are missing from the membership, the 20 per cent you do not have? Can you characterise them for me: smaller companies?

(*Mr Barber*) Some are smaller companies, perhaps our standards worry them. Some are other companies, perhaps they specialise in meat and meat products more and see that their needs are better served by the BMMA for example.

1173. What technical support and assistance on food safety matters does your Association provide to its members?

(*Miss Goodburn*) The basis of the Association is our chilled food guidelines. I have provided one copy of the latest edition. We have supplementary guidelines. The whole thing is set up for food safety. Everything we do is food safety. We provide technical support, ad hoc technical support. We have regular meetings which deal with general technical issues and hygiene and microbiology. We have a number of sub-committees which deal with specific issues. We liaise very closely with the research associations which are also members of our committees. In fact I would say that half of the executives of the board, the MDs, are technically qualified as well so everything we do is safety and technical. I get a lot of non-members, people who started with sandwich bars and so on, and rather than just say: "Go away", I do provide help. The guidelines are available at nominal cost and we have sold quite a number of them. They are disseminated internationally. Our standards are the basis of the European Federation standards and in fact next week I am going to the USA to talk to the USA manufacturers and tell them how we do it properly!

1174. We are going the following week so we will find out what you have said! This makes you unusual as a trade association, you are very focused on the single subject of safety.

(*Miss Goodburn*) Uniquely.

(*Mr Barber*) Yes. Except perhaps, Chairman, the one commercial bond we have is the protection of the customer and therefore our business. We do share quite openly the technical expertise that we have in the Association.

(*Mr Hattle*) It is worth mentioning that 90/95 per cent of our products go through the major retailers so there are stringent controls from that end right through.

1175. Typically you would not see your members' names on the products. Typically we would see another person's name on them.

(*Mr Barber*) Yes.

Mr Mitchell

1176. How do you develop the guidelines?

(*Mr Hattle*) What happened really was that we felt in the early days there was a need for people of a common mind to pool their knowledge and to do a better job. We simply got together a number of manufacturers and said there are some problems, why do we not talk about them and why do we not see what we can do and develop best practice. Within a relatively short time we produced the first version of the guidelines. We intended that to be a living document and therefore the version we now have is version number three. Each time we have upgraded the standards and improved systems and filled gaps. Probably in three or four years' time we will do another rewrite of the guidelines.

1177. You mentioned scientists, they are employed by the different manufacturers? Are they involved?

(*Mr Hattle*) Yes. Our membership is something like 700 scientists, many involved—as you mentioned yourself, Mr Mitchell—in product development but many also are in the process development, microbiology and many also attend the technical forums at Campden, Leatherhead, etc. For example I was at a research meeting yesterday and I will be at a research meeting tomorrow. So our aim really is to continue to push forward the boundaries of knowledge and to improve systems.

1178. How do our guidelines differ, or do they, from American and European guidelines?

(*Miss Goodburn*) The Americans do not actually have guidelines. It is a different legal system and Associations cannot stipulate "our members shall comply with guidelines", this is due to anti-trust laws or something like that. In terms of European standards, I was the original author when I was secretary of the Federation and they were based on our 1993 CFA guidelines. The UK industry leads the world in this technology. We do not stand still and say: "Okay we support this now", it goes forward. So we took forward our European Federation standards and developed them further into a more accessible document which more manufacturers can read and understand but chilled food production is very technical so every facility must have food technologists—it is not an optional extra.

1179. Your guidelines cover the whole ambit from manufacturing to distribution to—

(*Miss Goodburn*) This is manufacture. This is our focus of the Association.

1180. Okay.

(*Mr Barber*) Chairman, if I may just add to that, I think it is important we believe that the Food Standards Agency should be broad based and we want very much or would lobby for it to cover farm to fork. Some of your earlier questions were to our colleagues from the FDF, we do work with growers and suppliers. It is important that we look to control that operation. We then have HACCP, which you

[Mr Mitchell *Cont*]

have heard much about, through our organisations, but I think we then have to go on through to education for the consumer too.

Chairman: You are anticipating almost all our future questions. You are doing very well. We would like to explore each of these issues with you in some depth

Mr Mitchell

1181. Why does it not cover distribution? To pursue the earlier question about the length of time it takes a sandwich to get to me on British Rail—

(*Mr Barber*) Very short, I would say.

1182. Not on British Rail! Clement Freud has disappeared from my trains but that must pose problems.

(*Miss Goodburn*) No. We have very strong control over the chilled chain. In fact our members are required by their customers to deliver products to them at no more than five degrees which is a lower temperature than the law requires. It is very well controlled. It is in everybody's interest that it is controlled. The timescale of chilled food production and distribution is very short, in fact orders are placed and two or three hours later the truck comes and takes it away. It is made to order. It does not sit around anywhere. Stock is not held at factories.

(*Mr Barber*) Just-in-time management did not have to be taught in the chilled food industry. Your orders are confirmed at six o'clock in the morning and often the first vehicles leave before lunchtime. We do not have stock. Everything is made today and distributed today. I do not see a trend towards longer life, if anything it is held quite short. I would not want to get into a debate as to what is fresh. We tried to have that debate with Government before and we have never been able to get a definition. As far as the Chilled Food Association is concerned a short life as a definition of fresh is not a problem.

(*Mr Hattle*) It is worth understanding that every raw material we use has a use by date on it. Typically the sandwich that you may make at home may be made from chicken which is several days old and lettuce that is even older but all our raw materials would have a use by date so there is very strict control over raw materials before the product is made.

1183. I am pleased to hear that, there is a limited life on just-in-time sandwiches. How do you secure compliance with the guidelines once you have developed them? What is the machinery?

(*Mr Barber*) We have two ways. First of all, before you can become a member you have to sign up to the principles of the guidelines so you have to take on board those manufacturing practices that they contain. There are two ways of monitoring membership against that. Either you have to have an independent audit function within your business that will audit against those guidelines or you have independent auditors from outside concerns that audit your premises against those guidelines.

(*Mr Hattle*) In addition, if I may add, the retailers would be auditing your factories as well. We suffer from a plethora of audits.

(*Mr Barber*) There are lots of them.

Ms Keeble

1184. You say that "Food safety is inextricably linked to agricultural and environmental practices" and your response in the second of your points on the first page points very much to the problems lying in the agricultural area, agricultural production. Yet quite a few people would think that particularly in chilled food some of the safety arrives further down the line, particularly with small and medium sized enterprises. Could you say what supporting evidence you have for your views about the location of the risk or the primary risk?

(*Miss Goodburn*) There is independent evidence, the POST report actually indicates a number of areas. I would not seek to duplicate anything that is said in there, that is authoritative. We have designed factories so that every aspect is designed in terms of hygiene. We have the processes designed to ensure safety of products, heat processes in particular, and we have worked for the last ten years or so through the Association to eliminate us entering any organisms into the product. We find we are presented with raw materials which come out of nature and carry nature with them and that is where we are seeking to control things. We have put our house in order in the last ten years or so. We do not have issues of the safety of our products as a result of that and we seek to eliminate inputs into our factory which may contain contamination.

1185. You say where something is cooked and then chilled that you are satisfied that it is then safe but the problem is where there are raw products which are not cooked obviously and go into sandwiches, for example, that is where the risk lies if those raw products are already contaminated.

(*Miss Goodburn*) The heat processes are specifically designed to destroy any potential pathogens, even if they are not there. The processes are designed in such a way to do that. Raw materials are cleaned and washed so they reduce by a hundred fold any initial organisms which is better than you do at home.

1186. Do you have any other guidelines for the control of pathogens, for example listeria and E-coli in foodstuffs which are eaten raw?

(*Miss Goodburn*) Our guidelines set out what you do. We are working with the growers and have been working with them for the last 18 months or so to understand agricultural practices and understand better the ecology of various organisms and therefore define potential control mechanisms in the field. As I said earlier we do not have any issues at the moment but we are pro-active on this and we are working on a preventative basis to prevent any issues being presented in foods because it is in the interests of the industry and the consumer that there are no issues.

1187. Do you think that the risks are eliminated in the smaller processes as much as the larger ones?

(*Miss Goodburn*) If they follow the guidelines.

(*Mr Barber*) What we have to say is that good practice does not know the bounds of large and small and neither does bacteria. Therefore these guidelines have to apply to all processes whether they are large or small.

[Ms Keeble *Cont*]

1188. There are still risks, are there not? I had a factory in my own constituency shut down because of problems in sandwiches that were produced there. We must accept that there are still problems and where do they lie by and large?

(*Mr Hattle*) I could not comment on a particular factory or whether there was a problem with a raw material or a factory problem. Our concern would be any area of activity that does not employ HACCP. There are many. If you look at HACCP from beginning to end you identify a hazard early on in the food chain, that is where that hazard should be tackled. We should not be in the business of removing hazards if we do not need to have them in the first place. I think similarly at the other end of the chain we would seek support for better control of things like microwave ovens and standard ovens and indeed refrigerators because you are expecting these things to do a particular job and if they do not perform within strict criteria then your expectation may not be fulfilled. We are trying to make a lot of allowance for some of these shortcomings at the consumer end, not just the housewife but the equipment she has to work with.

1189. Or he.

(*Mr Hattle*) Or he indeed in my case.

1190. I want to get back to your guidelines for control of pathogens because I have had speculation that, for example, the next big food scare could be E-coli and it could come from raw food rather than meat given that there have been quite stringent controls around meat. Do you think that is a problem or are you satisfied that simply by washing the fresh fruit and vegetables eaten raw that deals with the problem, particularly given the fact that you only need a very small number, as I understand it, of E-coli cells to make somebody severely ill and even kill them?

(*Mr Hattle*) We are satisfied that the best we can achieve is one hundred fold reduction in any bacteria at present. We are satisfied to the extent that testing we have done does not indicate that E-coli O157 is coming in to us. Where we have a concern is we know that E-coli is out there and we would like to know and understand more about its fate. It does concern us, therefore, that there are gaps in research and indeed research in this country in our view is not geared along the proper lines.

1191. Is that about E-coli in fresh fruit and vegetables rather than in meat which has already been quite highly publicised?

(*Mr Hattle*) Yes, meat seems to be a straight forward hygiene issue.

1192. But fresh fruit and vegetables?

(*Mr Hattle*) You have to wash as thoroughly as you can. We would aim to do that better than it can be done in the home.

1193. I have one more question I want to ask and that is that your evidence and the Food and Drink Federation's evidence is in one sense absolutely identical word for word. I wondered if you had a sharing and if so whose work it was to start with? This is so we are clear about who has primary concern about this and it is the bit on Cryptosporidium. Presumably since you are a member of the Food and Drink Federation you must have discussed this generally?

(*Mr Barber*) Yes.

1194. Did you raise it with the Federation or did the Federation raise it with you?

(*Miss Goodburn*) It is a pan-industry issue, not just our sector. It has only been raised with respect to water. There was an outbreak in North West London where some factories in that area ceased production. There is no evidence to justify that action. Crypto does not grow on foods for example. We are looking for clear advice from the Department of Health on what we should do and also to prevent people losing their employment.

1195. There has been a general concern in the industry and people who share that are putting the same points in their evidence?

(*Miss Goodburn*) Absolutely.

(*Mr Hattle*) We felt that may be a gap in the Agency's remit.

1196. I can see that.

(*Mr Hattle*) Water did not seem to be included but water, of course, is a very widely used raw material in the food industry.

(*Miss Goodburn*) We would seek that water is required by law to be potable as supplied to the food industry. Currently the legislation is not applied like that.

1197. You wash your fruit and vegetables to the standard that you set.

(*Miss Goodburn*) We do not want contaminated raw materials coming into our factories.

Chairman

1198. Can I just be clear typically what your member would do to monitor the raw materials coming into the factory. Washing is not adequate to deal with some of the pathogens in raw fruit and vegetables. Some cannot be washed out, they are physically in the product. What monitoring would you typically do?

(*Mr Barber*) You tend to monitor, particularly because we are short shelf life, you monitor your final product but often by the time the bacteriological results are clear the product has been consumed so you do spend a lot of time in the chilled food industry monitoring raw materials and raw material suppliers so that you pick up any problems early.

(*Miss Goodburn*) Our suppliers are required to comply with HACCP and good manufacturing practices. We have HACCP throughout, it is not like an optional extra, it is the core.

Chairman: Let us move on to the core, Diana Organ?

Mrs Organ

1199. Yes, I wanted to ask about HACCP. You have mentioned that one of your first obligations made by the Association and its membership was to implement HACCP practice. You are saying your suppliers also do that. Is this a mandatory requirement on both your members and your

[**Mrs Organ** *Cont*]

suppliers and does it apply to the full seven sets of principles? Have you monitored levels of compliance?

(*Miss Goodburn*) Yes to all.

1200. Thank you. What are the levels of compliance?

(*Miss Goodburn*) We only take from suppliers that comply. Our business is not worth the risk. We supply to Marks & Spencer and Sainsbury and Tesco.

(*Mr Hattle*) It is an absolute requirement. We would not have a supplier who did not go through the HACCP protocol.

1201. Have you noticed that since this has been introduced and your Association has been working in this way that there has been a significant reduction in the incidence of food contamination in the manufacturing process? In other words, does HACCP actually work and have you got evidence to prove that?

(*Mr Hattle*) We introduced HACCP from the start and the record on chilled prepared foods is exceptionally good. I think we find it very difficult to measure the improvement because we did not start from a bad base.

1202. You are saying because HACCP is used by your members and by your suppliers that, therefore, your incidence of food contamination is in your area better than any other sector?

(*Mr Hattle*) No, I am not commenting on any other sector but what I would say is that HACCP is one discipline of many. It is a very worthwhile discipline because it does make you go through the system rigorously, identify hazards where they can be handled, what action you are going to take if it does not comply to these standards. It is wrong to think that HACCP was suddenly given birth X years ago because the principles of HACCP have been enshrined in good manufacture for quite a long time but pulling it together in an identified system has certainly been very helpful.

1203. In all seven set principles that HACCP laid out?

(*Miss Goodburn*) That is since 1989 I would say.

Mr Collins

1204. You say in your evidence to us that it is critical that there should be an appropriate level of scientific understanding throughout the whole food supply chain. "Current gaps in understanding relating to this stage of the chain can make it difficult for the food industry to assess and manage fully the risks posed by agricultural materials". I wonder if you could perhaps develop a little more what you meant by that. Where do you think these gaps in understanding are most noticeable and most worrying?

(*Miss Goodburn*) Environmental aspects of food safety? It is how the environment interacts with the food. If you see a field full of lettuce, that is food. I think it is important that the growers understand that and treat it as though it is food. We need to understand where potential organisms can occur, how they can get there and how we can stop them getting there.

1205. And your primary concern, therefore, in terms of where in a various stage of the food chain you think that ignorance is a problem is right at the very start at the farm?

(*Miss Goodburn*) I would not say ignorance. I would say the food supply chain needs to move with the industry. I think the PHLS said recently that E.coli is a new organism and that people who argue that unpasteurised milk, for example, has been safe for a thousand years are not dealing with this new organism. That is just an indicator of organisms that are available in the environment. Things have to move on in the supply chain as they do in the industry to deal with issues all the time. Instead of sitting back we ask for a proactive stance to be taken.

1206. Given that you say you are seeking a proactive role and given there has been quite a lot of research in this area both nationally and internationally what use have you made of the research in this field in recent years? You mentioned earlier, for example, that you regularly update your guidelines. Is that on the basis of research?

(*Miss Goodburn*) Absolutely.

1207. Are there other ways in which you take the latest scientific breakthroughs and discoveries into account?

(*Miss Goodburn*) Our guidelines are the primary vehicle which is why we keep updating them. Through the Association I, as the Secretary, provide all the latest scientific advice to the membership and that is a two-way dialogue with Campden and Leatherhead, for example, and the Institutes of Food Research. These organisations are at our meetings and we continually share information and build on it and act accordingly as required.

1208. Turning, therefore, to some of the latest research on this. The World Health Organisation in April/May of last year looked at EHEC organisms and called for further research in this area, particularly their tolerance to cold and their ability to adhere to food processing equipment. Obviously that is directly relevant to the work of many in your Association. What steps have your members taken to address this gap in research? Is it something that you are concerned about?

(*Miss Goodburn*) Those particular aspects are dealt with through general hygiene and sanitization of equipment. It is not an unusual organism in terms of cold resistance.

1209. So when the WHO call for research into this you think that they are being unnecessarily alarmist?

(*Miss Goodburn*) I think we have a lot of information already and those two areas are not at the top of our list.

1210. You are confident that this particular organism is under control in terms of being kept out of the products that your members put in front of the public?

(*Miss Goodburn*) We are not putting it into the product to start with.

1211. No, I am sure you are not. You are keeping it out.

(*Miss Goodburn*) We have not got any record of material being supplied to companies which is contaminated with this.

[**Mr Collins** *Cont*]

1212. Could you just expand a little bit on this because clearly the issue of funding of food safety research is quite important. Could you tell us a little bit about your attitude to these questions. Where do you think the balance appropriately lies between publicly funded research and research by the industry itself? What steps are members of your Association taking to undertake research in this area?

(*Miss Goodburn*) For the last two years we have been pressing MAFF to take a more holistic approach and to look at the environment, agriculture and food safety as one instead of scattering it amongst different Government departments that may not talk to each other. That is one thing. We have put in project outlines for public funding. We have also co-ordinated rounds of voting within the research associations to ensure that priority research projects are funded and that has worked as well. Individually companies are also funding research into various aspects of applied technology, shall we say, and that is on a daily basis, it is continual. We are involved at various levels. In terms of what should be publicly funded, I think there is a key point here that we have looked at pushing research down a certain route to answer questions but have found that mechanisms do not necessarily exist, they can be quite exclusive you can have Clubs and LINKS but then the findings of that research are limited to those people who fund it. We need this information to be widely disseminated to all the people, the small guys as well. For that reason it looks like public funding is the best way to do it. It is also on such a scale that it involves very many different elements of the food industry, that is in the widest sense, the suppliers as well, and one organisation or company cannot deal with the whole, it needs to be done through a central mechanism. We are really looking to the Agency to deal with this, to co-ordinate research and make sure the appropriate organisations are doing it and that it actually brings the answers to the key issues.

1213. I have just got two very quick final questions building on that. First of all, is it therefore your contention that as far as publicly funded research is concerned your primary concern is about bringing together the work of different departments or is your view that the scale of it or the direction of it could do with some amendment?

(*Miss Goodburn*) It is both of those. The scale of research is not great at the moment, publicly funded. Basically, I hate to mention the word, but BSE cost a thousand years' worth of MAFF micro food safety research funds. It is far better to be proactive than to have to throw money at an issue after it has happened.

1214. So you would like there to be more research?

(*Miss Goodburn*) We would like it to be properly directed to start with.

1215. Since you mentioned this point, as you do in your evidence, about the need for an integrated policy, for the departments to work together, for there to be single common standards and so forth, indeed in your evidence on page two you talk about the need for an integrated policy at national, regional and local level, do you have a perspective on the ways in which the creation of devolved parliaments and assemblies will have an effect on this? Would you wish to see common UK standards applied?

(*Miss Goodburn*) It would have to be European actually.

1216. You want to be as big and as integrated as you can get?

(*Miss Goodburn*) Absolutely. Because raw materials are sourced from abroad and the market is international. What is more, organisms do not care what side of the border they are on.

Chairman

1217. Can I just push you a little bit on the WHO gaps in research which you say do not exist. I just find it a little surprising that the WHO, and you very kindly gave us the document, talk about the need to have more data on the ability of EHEC to attach to surfaces of biofilms borne in the environment and on processing equipment. They talk of the survival and growth of these organisms in whole packaged cut vegetables in a modified atmosphere of packaging. There is a series of information where they think there is not enough information about E.coli as it seems to affect your industry. I just want to be sure you disagree with the WHO on this.

(*Miss Goodburn*) Our focus is on preventing it coming into the factories because if you have proper sanitization and so on as we require then this organism is no different from any other, it is not a superbug or anything like that.

1218. Assuming you cannot get 100 per cent prevention, and it is very difficult to get 100 per cent, you can get very close to it.

(*Miss Goodburn*) Yes, but remember it is not coming in at the moment, it is not there. We do not want it to start to come in. It is all very theoretical in those terms.

(*Mr Hattle*) What we seek is an understanding of what is happening because we are not receiving it but we know it exists and, therefore, the concern is that something could happen somewhere and we do start to receive it. We want to get involved. We want to see work being done to say how do we stop this being there in the first place and what is its fate when it is there.

1219. So you are saying that the WHO is putting these recommendations in and it is probably thinking about other parts of the food industry, for example the meat industry?

(*Miss Goodburn*) Possibly.

1220. There is a very large section on generic research in the HSE on processing and you are saying it is not coming in. It seems very odd that the WHO should see it as a priority.

(*Miss Goodburn*) One of their priorities again is to understand how it behaves in the environment, where it goes and are there natural mechanisms to stop it coming in.

Ms Keeble

1221. I just wanted to ask a bit about your perception of different forms of food storage and then cooking. The Director General of the Meat and Livestock Commission noted that the risks of defrosting meat inadequately were the same as that of mishandling or mispreparation of a ready meal and you expose people to precisely the same risk. Would you agree?

(*Miss Goodburn*) We do not actually deal with defrosting.

1222. No, I know you do not. Is your perception that food defrosted and then cooked carries about the same risk as your own products, your own chilled products?

(*Miss Goodburn*) We do not actually have any safety issues with our products which is why the industry is so successful. It is difficult to talk about relative risks when we do not have an issue.

1223. You cannot ignore the fact that people have actually suffered from food poisoning as a result of, for example, eating sandwiches and that certainly is the case in the case of a factory in my constituency which led to the factory being closed. You cannot then say there is no risk, of course there is a risk. You have to take precautions to protect yourselves against risks, there are risks.

(*Mr Hattle*) The difficulty is we cannot comment on that factory. For example, in our factories we may have three separate areas: one for raw material production, one for processing and a high risk area where sandwich production can be constructed. It may be there are many manufacturers out there who are not operating to these standards. There are different risks according to the method of production and the control they have over their own raw materials. I find it very difficult to comment on someone who I assume is not a member of our Association.

1224. I think it probably was actually. What recommendations do you make to consumers about the storage and processing of chilled food in the home?

(*Miss Goodburn*) All packs are labelled with storage and handling instructions, cooking instructions, storage temperature is marked on it and a use by date. These are sold through the major multiples as well. Marks & Spencer, Sainsbury and Tesco have an interest in this as well. It is not just left to us on the label.

1225. Okay. But you do not provide any other advice in leaflets or anything like that?

(*Miss Goodburn*) These are Marks & Spencer, Sainsbury and Tesco products, they do not have our names on.

(*Mr Hattle*) That part is an in-store exercise which we may participate in.

Chairman

1226. But there have been problems with your products, you said that yourself earlier today. You are saying now that there are no problems at all, all chilled food is absolutely splendid and perfect.

(*Mr Barber*) No, I do not think we are saying that.

Ms Keeble: That quite self-evidently is not the case. The factory in my constituency was the supplier to a major retailer and the factory had to be shut down because there was a problem about food safety. There are risks, there are problems.

Chairman

1227. Your organisation would not even exist if there were not problems.

(*Mr Barber*) Chairman, I must say that if you are going to eat food you are going to take a risk. We all understand that. What I believe our organisation stands for is to produce food in the safest possible way. If any of our members came across a problem the same thing would happen to us, the factory would be closed, it would be cleaned, and we would do the research to find out where the problem was. I do not deny that could happen, and can happen, in any factory that produces food.

Ms Keeble

1228. Earlier when I asked you made the comments that I have to say I think we have become quite used to hearing about the housewife has to learn to wash her hands which implied that you have got views about consumer safety and about consumer education. So it surprised me that you then said that the only advice you give to consumers is on the labelling which at the end of the day you do not have to take responsibility for because it is really down to the retailers to take responsibility for.

(*Miss Goodburn*) We are actually an active participant in the FDF's food safety awareness campaign. We are distributing fridge thermometers in particular. We have been working with consumers' associations in the past on standards for domestic fridges. I am a member of the BSI Committee seeking improvements in the design and performance of fridges. Indeed, if they could just have a thermometer that would be a start. We are not just looking at labels, we are looking at the whole chain—it is how the industry exists. In the chilled food industry in particular the chain principle is very important. The chill chain holds it all together so we more than any other would be more aware of the ends of the chain, the middle and all the links.

1229. How about microwaves, which was also something that you mentioned earlier?

(*Miss Goodburn*) That is right. That was 1989/90.

1230. What improvements would you need there?

(*Miss Goodburn*) A system was put in of properly rating the ovens to show how they performed rather than just wattage. We were involved in that about ten years ago now. The Association is still involved in the UK Microwave Working Group with consumers and so on.

1231. More recently do you think that there are improvements that could still be made to the design of microwaves?

(*Miss Goodburn*) We found at the time that they were designed in Japan and little was done to them here and the use in Japan was not necessarily the same as the use of them here which is why we have

[**Ms Keeble** *Cont*]
done a lot of research. Last week I was in a room at Campden Research Association and there were 30 microwaves in the room.

Chairman

1232. We have been in that room as well!

(*Miss Goodburn*) There is continual investment and research in this, it is not something that you leave to chance.

Ms Keeble

1233. But what I am saying is what practical improvements do you think can be made now to microwaves?

(*Miss Goodburn*) I am not a microwave engineer.

1234. Okay. Clearly you must have views on it.

(*Mr Hattle*) We can say what we would like but it is very difficult to say whether it is possible. We would very much like it if microwaves were more standard in their performance, it makes it easier to give guidance, just as if fridges were more standard in their performance guidance is easier. What we have to do at the present time is we have to make an allowance for the fact that there is a variation in these things and build that extra safety margin into our instructions. You get phrases such as "ensure that it is piping hot", it is not a terribly good phrase to use but at the end of the day it is so difficult to say something else that helps the consumer.

Mr Hayes

1235. I hear what you say and I listened carefully to your answers to Sally's questions. Given what you said earlier about the length of the food chain, the importance of identifying risks earlier, in an ideal world putting aside commercial considerations, convenience, etc., purely from a food safety point of view we would be better off without chilled food, would we not, which lengthens the food chain, which increases the number of processes between production and consumption, which creates an element of risk which would not have existed before chilled food?

(*Mr Barber*) I would obviously disagree with that but I would, would I not?

1236. But why would you disagree with it?

(*Mr Barber*) Probably because I would argue that the processes we use in some of our factories for the preparation of our food are probably superior to what you have got at home and we are prepared to guarantee it.

1237. What about the issue of lengthening the food chain? Is it not better to just take the food from production to consumption as quickly as possible so the food is as fresh as possible with the minimum number of people handling it, the minimum number of processes that it goes through, so that the risks are effectively minimised as well?

(*Mr Hattle*) I do not think there is anything to support that point of view because I would suggest that there is probably more food poisoning caused when people are eating out than is ever caused by eating chilled foods which have a more extended life.

Mr Mitchell

1238. You cannot show that statistically.

(*Mr Hattle*) I think there is a lot of evidence there to suggest that.

Chairman

1239. We are getting into a big debate here and as we are getting to the end of our time with you we ought to resist the temptation to do that. Before I go to Mr Mitchell for the last question can I ask one point of clarification about E.coli 0157. Do you advise your members to examine products for that specific organism?

(*Miss Goodburn*) We have looked for it in the past and not found there to be an issue so we have decided as well as monitoring generally for pathogens which may indicate their presence that it is best to spend our resources on preventing anything occurring. Simple testing does not actually do anything.

1240. How do you know if you have succeeded unless you test?

(*Miss Goodburn*) Testing is not eliminated altogether.

1241. You do not advise your members to test for E.coli 0157?

(*Mr Hattle*) We do not specifically advise them but some of our members have done screening exercises.

1242. Do your customers like Marks & Spencer, for example, Tesco and Sainsbury have different requirements as to what you should monitor for?

(*Mr Barber*) I would guess they do because they are all individual.

Mr Mitchell

1243. I was going to express concern if you are going to rely mainly on dates on things like sandwiches because I did a thing about my fridge for a newspaper and I sorted out what was in the fridge before he came to do it and I found in all the food I was storing in the fridge, which filled one shelf, three sandwich packs. I could not remember when I had bought these and I had torn off the front wrapper which carries the date and how to eat it information so I had no idea.

(*Miss Goodburn*) I would recommend that you are not supposed to do that!

Chairman: You will get your knuckles rapped, Austin!

Mr Mitchell

1244. It shows the need to inform the consumer when you have got idiots like me around. The pack itself could have carried the information but the front wrapper had gone.

[**Mr Mitchell** *Cont*]

(*Mr Hattle*) We would always suggest that if you have forgotten when you bought it you should throw it out.

1245. It was probably archaeology to reconstruct when I bought it. I want to finalise things with the White Paper. You have looked at the White Paper, do you think it will make a significant contribution, any contribution, to raising hygiene standards in your area?

(*Miss Goodburn*) We hope so.

(*Mr Barber*) We are supportive of the Food Standards Agency. I think anything that raises the awareness of safety in the food chain from farm to fork and through to the consumer must be worthwhile. We are prepared to support it with the knowledge that we have and we believe that we have an awful lot of knowledge to give. I think I am concerned that we measure it and measure its success. Perhaps you are going to ask me would we pay for it? It is not in my nature to give money freely but I have to say that probably for us more important an issue than how it is funded will be that standards are applied evenly throughout the industry across the industry to ensure that standards improve.

Chairman

1246. Just to check: do you think it can raise standards in your own sector because you are saying they are already incredibly high and not capable of further improvement?

(*Mr Barber*) In our sector, yes. The more members we have in our sector the better the standards will be and I think the Agency will help.

1247. The 20 per cent who are not members?

(*Mr Barber*) Yes. The principles that we stand for I have to say apply to many industries and not just our own.

1248. I am very interested about measurement, that is something that does this interest this Committee, how we measure the success of the Agency. Have you got any suggestions for variables that could be measured to make sure that it is genuinely succeeding?

(*Mr Barber*) Maybe the incidence of food poisoning, for example.

1249. Incidence of food poisoning is a test that you think we could apply?

(*Mr Barber*) It could be.

Ms Keeble

1250. Do you support the proposals to have nutrition in its broadest sense within the remit of the Food Standards Agency?

(*Mr Barber*) Not entirely. I think we talk about the breadth of the Agency and I think that in its nature you have to say if it is going to cover everything will it be effective? For our member companies we have to put on nutritional information. I believe we should limit it to fact because that has to be on there. I am quite happy that we have to produce first and foremost safe food, we have to have on our packs nutritional information on that food and I believe the Department of Health can advise us how much of that food is good for us or bad for us.

Chairman

1251. You were actually in the room for the FDF evidence on this specific issue about the role of nutrition and presumably you would associate yourself with everything that they said, you would agree with the line that the FDF took?

(*Mr Barber*) I think that is similar to what they have said but I have not double-checked.

Chairman: Thank you very much indeed. We are very grateful to you for your time and trouble and we all look forward to eating our sandwiches at lunchtime.

Mr Mitchell: Not mine!

Chairman: Thank you.

Memorandum submitted by the British Meat Manufacturers' Association (C17)

BMMA represents the collective interests of the majority of UK manufacturers using meat in processed foodstuffs (eg bacon, sausages, meat pies, ready meals). The sector accounts for more than £5 billion in annual consumer expenditure.

BMMA's response to the Committee's questions is as follows:

Recent trends in the incidence of bacterial food poisoning in the UK and effectiveness of the system of notifying cases of food poisoning

BMMA would largely reserve comment on this to those responsible for public health administration and relevant experts, statisticians, epidemiologists, etc.

Nonetheless, BMMA supports effective and efficient systems which are able to identify the cause and source of food poisoning incidents, to control outbreaks and develop appropriate and effective action to prevent such incidents recurring.

Significant gaps in current scientific understanding of, and statistical information on, food safety issues

It is very important that Government continues to support research into food safety in order to ensure that scientific understanding is up-to-date and as comprehensive as possible. On the basis of Government research, industry can then develop its own scientific and technical procedures and capabilities to apply at operational level.

Another important aspect of food safety which is underway is that of traceability. Meat manufacturers already apply full traceability systems as raw materials and products are processed: it is becoming the norm for meat to be traceable back to the farm. This will become more extensive and refined as farms develop quality assurance systems which keep data records.

The level of food safety risk at all stages of the human food chain

It is an unavoidable fact that there are always safety risks where food is concerned: the objective must be to control, reduce and prevent such risks as far as possible across the whole length of the food chain.

This requires the application of HACCP (Hazard Analysis Critical Control Points) systems to ensure that high standards of food safety are maintained consistently from the farm to the plate. HACCP is a risk analysis-based approach which involves identifying critical points in the food production process where food safety could be at risk and ensuring that all appropriate steps are taken to manage and reduce that risk.

BMMA Members are required to comply with an independently audited Accredited Standard of good manufacturing practice whose safety aspects are based on HACCP. Each company in membership must implement a HACCP system and comply with rigorous standards of hygiene and safety. These include microbiological sampling and testing throughout the process from raw material to finished product, the maintenance of strict temperature controls, screening for foreign bodies and hygiene standards for transport vehicles, equipment, plant and personnel.

BMMA believes that HACCP accompanied by standards for good manufacturing practice and backed up by risk-based levels of enforcement are the best means of guarding against food safety risks. It welcomes the extension of HACCP to the retail/catering sector and the strengthening of enforcement as a result of the Pennington report and is urging extension of HACCP techniques across slaughterhouses and as a prime component of farm assurance schemes. BMMA Members who operate slaughterhouses already comply.

It is crucial that the Food Standards Agency is able to control food safety through the application of consistent standards across the food chain. These standards should be developed in partnership with food producers as the most effective means of encouraging best practice and of ensuring that producers assume their specific responsibilities for food safety. The Food Standards Agency should seek to clarify and reinforce the respective responsibilities of all players in the food chain as well as those of the enforcement authorities.

Training of personnel is another crucial factor in ensuring best practice. The meat sector develops and implements training programmes through its Meat Training Council which was the first to be recognised as a National Training Organisation by the Government. The MTC is presently developing a foundation meat hygiene certificate that is occupationally specific.

As well as promoting training on farms, in factories and commercial food outlets, the Food Standards Agency needs to focus on the importance of consumer education, not least in schools. The food safety chain has to remain intact until the food is eaten and the chain can easily be broken if, in the home, food is not stored, prepared and cooked properly. Critical information is included on food labels and consumers should be urged to observe them.

Food Safety Implications of the Presence of GM Organisms in the Human Food Chain

The legislation and procedures developed by the EU to assess the safety of GM products are designed to ensure that products put on the market are fit for environmental release and human consumption. It now seems important to foster public confidence in the legislation.

As for labelling rules, these should enable differences between the characteristics and properties of novel and conventional foods to be conveyed meaningfully to consumers. It might be considered appropriate in the early stages of marketing foods containing ingredients derived from GMOs to label the use of biotechnology but this should be reviewed as such ingredients proliferate to assess the value of the information which could detract from consumer appreciation of other, more important, labelling information.

15 October 1997

Examination of Witnesses

MR DAVID WALKER, President, MR WILLIAM JERMEY, Council Member, and MISS JILL ARDAGH, Director, British Meat Manufacturers' Association, examined.

Chairman

1252. Mr Walker, welcome to the Committee. Thank you for the written evidence you provided us with some months ago now. Can I begin by asking you to introduce yourself and your colleagues?

(*Mr Walker*) My name is David Walker, President of the British Meat Manufacturers' Association. I am also a Commissioner of the Meat and Livestock Commission. Bill Jermey is the Chairman of one of our member companies and he is a Council Member of the British Meat Manufacturers' Association. Jill Ardagh is our Director of the Association.

1253. Thank you very much. Can I just begin by asking a few practical questions about the BBMA itself. Just for a point of clarification, is it red and white meat or just red meat?

(*Mr Walker*) Mainly red meat. White meat if you consider pork. Poultry meat, most of the poultry processors are members of the Poultry Association.

1254. We are not talking about chicken and turkey today.

(*Mr Walker*) No.

1255. How much of the relevant meat manufacturing industry in the UK would you say is enroled in the membership of the BMMA?

(*Mr Walker*) I would say about 70 per cent. We say that the manufacturing industry represents 54 per cent of all the meat eaten in the country per annum.

1256. Would you be able to characterise non-members for me? Is there any pattern? Are they the smaller people? Are there some big people staying out on principle?

(*Mr Walker*) I do not think there are any big people staying out on principle.

(*Miss Ardagh*) Only very big poultry processors, Bernard Matthews for example. I cannot think of any big meat manufacturer.

1257. It is typically the smaller operators?

(*Miss Ardagh*) Yes, some of the smaller operators.

1258. Do your members have any specific concerns about food safety policy, anything particular that is dominating your discussions in the Association?

(*Mr Walker*) We have been spending a lot of time talking about the Food Standards Agency recently and of course we have reacted to all of the food scares which have cropped up over recent years. We were way ahead of that in so far as in 1992 we started an accreditation scheme and to be a member of the British Meat Manufacturers' Association you must be an accredited member which means that you must have your plant passed by an independent body, not by us but by an independent body, to EFSIS standards.

1259. What is that independent body?

(*Mr Walker*) EFSIS and the EFSIS inspectors.

(*Miss Ardagh*) The European Food Safety Inspection Service.

(*Mr Jermey*) Of course we cannot forget the BSE issue that has been dominating us for a while.

1260. Absolutely. Have the nature of the inquiries you receive from your members about food safety issues and the volume of them changed at all in the recent past over the last few years?

(*Mr Walker*) I think, supporting what Bill said, we have spent a vast amount of time talking about the BSE issue over the last few years. I do not think they have changed that much.

Mr Mitchell

1261. You say you "reserve comment" on the incidence of bacterial food poisoning, that is a matter for public health administration, the relevant experts, statisticians, epidemiologists, etc. Why do you reserve comment, you must have views on why there has been such an increase in food poisoning in the last five years?

(*Miss Ardagh*) Reading the question literally that was put to us it was what do we think about the system of notifying cases of food poisoning. I think we felt that people who were expert in, for example, epidemiology should comment on this.

1262. Yes, but the heading is "recent trends in the incidence of bacterial food poisoning". You must have views on why there is an increase.

(*Miss Ardagh*) In the recent trends? We understand that a higher number of cases are being reported.

1263. Do you see the incidence as going up or is it just a matter of more people reporting it?

(*Mr Walker*) I think it is more people reporting it quite frankly.

1264. You do not think that represents an actual increase in—

(*Mr Walker*) There is such an awareness now. We all respond to the environment we live in and the media that we watch and read. There is no doubt that whereas before people would accept a slight upset stomach, now they can make a case of it and report it and they are doing that. I am not undermining it, I am not trying to belittle it, I am just saying that we really do believe that there are more cases reported now than there ever have been in the past.

1265. It is more of a perceived problem and therefore more of a threat to your industry. It is not good enough to say that people are getting more picky.

(*Mr Walker*) I would not say that people are getting more picky.

1266. I am afraid we are getting more picky. It is a matter of objective fact. This perceived trend requires you to issue guidelines, instructions, to your members to try and improve standards. What are you doing in that direction?

(*Mr Walker*) We are constantly trying to improve standards and we are constantly reviving our in-house controls for our members.

[**Mr Mitchell** *Cont*]

1267. That sounds like the Civil Service when they say "this subject is kept under perpetual review" and every issue is kept under perpetual review in the Civil Service. When you say "constantly trying", what specifically have you done?

(*Mr Walker*) For example, within the BBMA we have some committees. We have a health and hygiene committee, we have the senior technologists from each of our major members who are constantly working to an agenda and making recommendations to councils, it is ongoing all the time.

(*Mr Jermey*) We do have standards of compliance and we have manuals of operation and regularly individual parts of those documents are being reissued where standards are being improved all the time in order that any new threats are looked after properly by our industry.

(*Mr Walker*) We also, of course, you will realise are representing the majority of the larger manufacturers who supply the larger multiples. We are reacting continually to their technical input.

1268. Yes. You also say that you need "effective and efficient systems" for the detection of food poisoning outbreaks. The question that arises from that is what you have done and what your members have done to invest in those efficiency systems for detection?

(*Miss Ardagh*) That would be echoing what the Chilled Food Association has talked about. We would have in the factory HACCP systems for monitoring, controlling and preventing any contamination in the factory and for seeking to ensure that food safety standards are the highest possible. Was that your question?

1269. Yes, it does answer it in large part. It just gives the impression that—

(*Miss Ardagh*) Are you talking about crisis management?

1270. No, I am talking about investment in warning systems really.

(*Miss Ardagh*) Warning systems?

(*Mr Walker*) Your investment in warning systems can only be your investment in your laboratories, in your quality control in each plant which is emphasised by HACCP and it is one of the EFSIS examination points. The standard of hygiene and technology in each plant and the EFSIS audit is not just on the recipe of course, it is on the whole condition, the standard of the plant, the hygiene of the plant, the written down method of cleaning the plant, the contact plate of the plant in the morning, the fact that you do not just say "I have cleaned the plant", your laboratory checks that you have cleaned the plant using contact plates the following morning before the commencement of production.

(*Mr Jermey*) A useful question to answer would be why do companies such as ours and all other members of the BBMA join the BBMA in the first place and spend money on being members and maintaining our accreditation? This is because we see that as helping us to be at the leading edge of food safety within our industry.

1271. Like the chilled food manufacturers just told us you require them to accept these high standards as a condition of membership.

(*Mr Jermey*) Absolutely.

1272. You have a means of discipline in a sense.

(*Mr Jermey*) Absolutely.

(*Mr Walker*) If you fail the accreditation scheme of the British Meat Manufacturers you get one chance and constructive conversation and you must come up to standard but if you fail a second time you must resign from the BBMA or the Council will remove you.

Ms Keeble

1273. You talk about traceability of meat products. We have actually seen and heard quite a lot about that. Can you say what the implications are in particular for food safety? Is it just that if there is a problem you can trace it back to the farm or does it actually have implications for your own handling of the meat and the safe handling of it?

(*Mr Walker*) The biggest effect of traceability in terms of food hygiene is in tracing it back to the farm. Of course you are interested in the medical records, veterinary records, medication. Anybody that is involved in traceability on farms today also inspects the farms for their husbandry. The whole thing contributes towards a higher standard of food. For the same reason the farm sending animals to the abattoir must send the animals now in a clean state. The traceability is this part of moving the whole thing upwards.

1274. Other than that a particular advantage in terms of food safety is after the event, it is the ability to trace back and correct any practices which have been going on which are not very good?

(*Mr Walker*) Yes.

(*Mr Jermey*) But before that we would inspect all raw materials and suppliers so that they were approved suppliers and approved raw materials in the first place. The traceability is a back-up.

1275. In approximate terms what percentage of your members' products come from farms which are involved in the Quality Assurance Schemes and what is your view of those?

(*Mr Jermey*) It will vary. In my particular case we have a particular problem because we are exporting something like 12 per cent of our products. In order to get export approval we are not allowed to have British meat on the premises. We are importing all our meat. The same traceability does not apply in the countries that we are importing meat from.

1276. Are you concerned about that?

(*Mr Jermey*) Yes.

1277. So you think there should be similar traceability for meat coming from abroad as well?

(*Mr Jermey*) Absolutely.

1278. You mentioned tracing back looking at the safety records on farms, what do you do about the abattoirs? For example, do you take notice of HACCP in relation to abattoirs?

(*Mr Walker*) Absolutely. You asked the question and I answered it going straight back to the farm. It follows that the standards which we insist on in our manufacturing plant, each individual plant insists on those in the abattoirs and boning rooms. Most companies now have their own quality controllers working in the boning rooms and in the abattoirs.

[**Ms Keeble** *Cont*]

1279. What is your view then of the standards set by the Meat Hygiene Service if you have your own inspectors?

(*Mr Jermey*) I think our own inspectors are to ensure that the Meat Hygiene Service gives good grades.

(*Mr Walker*) Also our own inspectors are answering and looking for particular points which are stressed by individual customers.

1280. Do your members handle products other than meat? Presumably they produce breaded bits of meat?

(*Miss Ardagh*) Yes.

1281. And meat pies and stuff like that?

(*Miss Ardagh*) Yes.

1282. Do you feel that the other sections of the farming industry and others should have the same sorts of requirements in terms of traceability so that, for example, you can trace back and see what crops might have been sprayed with and what might be on the grain you are handling and similar types of things?

(*Miss Ardagh*) Yes.

(*Mr Jermey*) The principle has to be right. There is a long way to go before the practice is achieved.

1283. Do you think that is something that should be looked at in terms of food safety, that the principle of traceability should be applied across different food products and not just across meat?

(*Mr Jermey*) Provided that HACCP has been used in establishing where we are looking at the problems, in other words risk assessment, somebody has to make a judgment on where the greater risks lie.

1284. Is there any glaring area where you would say there is a risk?

(*Miss Ardagh*) I was going to perhaps raise the issue of the Food Standards Agency and how comprehensive it is in its coverage of food production. After all, agricultural production produces food. I think that perhaps in the White Paper it was disappointing not to see a reference—

1285. Sorry.

(*Miss Ardagh*) Sorry, am I jumping questions?

1286. Yes. I particularly want to know from your members' experience if there is an area where you feel there are particular risks which are not being dealt with?

(*Mr Jermey*) In terms of perceived risks, yes, I think then genetically modified materials, having a clear knowledge that whether or not materials we are using as raw materials do contain GMMs. That is a clear requirement that our customers are looking for information on. We do not like to be hoodwinked. We try to make sure we know what we are buying but sometimes that is not possible.

Chairman

1287. Could I just ask you to go back to the point you made about you are not allowed to have British meat on your premises. That is British beef presumably?

(*Mr Jermey*) British beef, yes.

1288. Do you work for the domestic market as well?

(*Mr Jermey*) Yes.

1289. So the requirement of your overseas' customers means—

(*Mr Jermey*) No, the requirement of MAFF.

1290. To avoid any risk of the export ban being breached by accident?

(*Mr Jermey*) Yes. Until November last year we had a separation scheme where we were using both imported beef and British beef. We had to prove that our exports were only coming out of production at a time when imported beef was in the system. Since there were some problems last year with fraud MAFF have taken a tougher line and they have said either you accept full-time 24 hour veterinary supervision, which would make exporting uneconomic, or you will only have imported beef on the premises. We have had to go down that route. We do not like that and our customers do not like that. We have had to defend our position to customers who have been asking recently "are you using British beef?" We are forced down that route because of the tough line that MAFF are taking.

1291. You would like to use British beef.

(*Mr Jermey*) Indeed.

1292. But you are not allowed to. You are therefore using beef which actually privately you probably believe is less secure, less traceable, than the British product?

(*Mr Jermey*) Yes. I have to say that we source the beef from countries that we have more faith in than others.

Mr Mitchell

1293. Like?

(*Mr Jermey*) Like Eire and South America.

Ms Keeble

1294. Can I just ask one point on this because there has been much said about the fact that animals go to abattoirs clean and they are cleaner now than they were before, and it is indeed true that they are cleaner, but the British Leather Confederation, which by chance is in my constituency, has produced very clear evidence that quite a proportion of animals are going with large amounts of dung attached because they get the hides so they weigh the amount of contamination on the hide and in particular that cattle from Southern Ireland are particularly heavily polluted. Do you have some fears that with the concentration on BSE risks that other risks, in particular the one about contamination and dirt on the animals with the implications for E.coli, are being overlooked?

(*Mr Walker*) No. Not now, not since the E.coli scares. There are very few abattoirs now that will accept cattle that have not been shaved. You cannot wash it off.

1295. Eire.

(*Mr Walker*) I do not think I can comment on Eire but I can comment on Great Britain.

[**Ms Keeble** *Cont*]

(*Mr Jermey*) I do agree. I would have more confidence in British beef than beef from anywhere else at the moment because of the safeguards that we are taking.

(*Miss Ardagh*) Perhaps just to add, as previous speakers have said we would like to see the same standards across Europe, across the EU, so we can have confidence in anything that we import so that we are on a so-called level playing field.

Chairman

1296. That is not going to happen, is it, we are in a two-tier system, are we not?

(*Miss Ardagh*) It is getting worse.

1297. What will happen about Northern Ireland cattle if they get their partial exemption from the export ban? Will you be allowed to use Northern Irish cattle in your processing plant?

(*Mr Jermey*) In theory, yes, but in practice, no, because the conditions that are set in this Commission decision mean that nobody is going to be exporting beef from Northern Ireland for processing because one of the conditions is that the plant producing the beef must be 100 per cent export oriented and nobody is going to do that, there is not enough market.

Chairman: This is a very interesting area but it is probably not technically relevant to this inquiry.

Mr Mitchell

1298. This requirement means that the imported beef, meat, has got to be segregated all the way through in the cold store, in—

(*Mr Jermey*) Yes.

1299. Does that increase your expenses substantially?

(*Mr Jermey*) From where we are at the moment no, because we are purely using imported beef so there is no segregation. Where we are likely to be is wrapped up in this proposal to ease the ban in Northern Ireland. There are significantly new proposals for export of beef products. In that case, yes, there will be huge expenses. It is a real worry that we will not be able to warrant exporting beef products because of these new controls.

1300. Presumably the export trade has fallen substantially with all this beef scare?

(*Mr Jermey*) The export trade has. In our particular case we have continued to grow our exports. In fact, we won the Baking Industry Exports Award last year for that reason. It has changed. Some countries have stopped importing beef products from the UK entirely like France and Spain, Spain to a certain extent. In other areas our markets are still growing. Our customers still want our products, it is the governments making it more difficult.

Chairman

1301. This is a terribly interesting area and it is a bit tangential from the inquiry. Do you actually label your products with "this product contains no British beef"?

(*Mr Jermey*) Yes.

Mr Mitchell

1302. And a Union Jack!

(*Miss Ardagh*) Made in Scotland!

(*Mr Jermey*) We are still British meat manufacturers.

Chairman: British—meat manufacturers! I think we had better move on. We might discuss this with you again at some other time. Mr Collins.

Mr Collins

1303. We heard earlier in our hearings from the PHLS, the Public Health Laboratory Service, that the incidence of Salmonella in sausages and burgers was "dramatically worse", that was their phrase, at the economic end of the market than at the quality end of the market. As a great fan of sausages and burgers myself I am going to slightly regret asking this question but nonetheless I would be grateful if you could answer it. Could you comment on the quantity of meat, actual real meat, in sausages and burgers produced by your members at both ends of the market?

(*Miss Ardagh*) Goodness me!

(*Mr Jermey*) How do you define "meat"?

1304. How do you define "meat" is even more interesting.

(*Miss Ardagh*) Our members produce a lot of sausages and a very broad range of sausages for the economy end of the market and for the luxury end of the market if I can put it like that, but they are all manufacturing in accordance with our accredited standards. They are all manufacturing to the same standard. Just because a sausage is a lower cost it should not be any riskier or contain any more Salmonella than a sausage which is going to retail for a higher price.

1305. That is your statement but, of course, the PHLS who are the people who are responsible for doing actual scientific studies into this tell us that they do think that there is a dramatic difference between the likelihood of Salmonella in a cheap sausage and an expensive one.

(*Miss Ardagh*) Did they give any reason?

(*Mr Walker*) This is a thought on my part immediately. Is that not because at the cheaper end of the market the whole ambience of handling, storage, preparation, cooking on a grill on the curbside, is completely different. That is where the contamination comes from.

(*Miss Ardagh*) It is difficult to comment meaningfully because I have not seen this report and I do not know, as David said, where they took the sausage from. Was it from the retail end? Was it from Mr Mitchell's fridge? I do not know. That would all have a bearing on it.

[**Mr Collins** *Cont*]

1306. Could you comment then on the use of mechanically-retrieved meat in sausages and burgers? Is that something that is widely used by your members in the process?

(*Miss Ardagh*) Again, across the spectrum it is used as an ingredient, yes, but again the standard of production is set down by the BBMA. We do not believe that there should be higher levels of Salmonella in a sausage which contains MRMs than one that does not.

1307. But generally speaking people should eat good Cumberland sausage and they will be all right.

(*Mr Jermey*) Just because it is called "Cumberland" does not mean to say that it does not contain mechanically-recovered meat.

1308. No, but hopefully at least some of it will come from Cumbria which is what I am concerned about.

(*Mr Jermey*) I do not think so!

Chairman: Pork barrel politics!

Mr Collins

1309. Absolutely. Miss Ardagh, you were just saying something very interesting about your disappointment in the White Paper when you were cut off in mid-stream. Perhaps you could complete that sentence and tell us what causes you to be disappointed in the White Paper?

(*Miss Ardagh*) I think what has emerged from the BSE crisis is that we need to have an integral approach to food safety across the food chain from the farm to the plates. I think that the idea is developing that farmers are not producing a commodity so much as food, they are an integral part of the food chain and we need to have higher standards right from the farm onwards. This is an issue raised by the White Paper: where does the Food Standards Agency's remit start? I think we are disappointed, for example, that it does not talk about HACCP systems in the farming sector, that it is leaving significant parts of agricultural production to MAFF, areas for example which can have implications for food safety. I suppose we are concerned that the Food Standards Agency is being added on to Whitehall, it is an extra department, and there will be areas where food safety arises which are left with MAFF, areas of food safety left with the Department of Health. It is absolutely paramount that co-ordination, liaison, between these departments is effective.

Mr Mitchell

1310. It should have comprehensive coverage right across the board from start to finish?

(*Miss Ardagh*) Yes. We have campaigned, for example, for the animal health division of MAFF to come into the Food Standards Agency. We view it as highly ironic that the division of MAFF which is responsible for the policy on BSE will not be part of the Food Standards Agency.

Chairman

1311. I want to come back on the Food Standards Agency with just a few more questions but I just want to come back to this question of cheap sausages because I think it is an important point. We did get very clear and specific evidence from the PHLS on this. On 2 December, giving oral evidence to this Committee, Dr John de Louvois, who is Head of the Environmental Surveillance Unit of the PHLS, said this: "The finding from the study which concerned us most in both products" that is sausages and burgers "was that the economy end of the market was dramatically worse than the high quality end and information that we have had since this has reinforced this. People are buying very low priced sausages where the amount of red meat was seen to be dramatically lower than in best beef sausages and in these the contamination level of Salmonella in general and Salmonella enteritidis PT4 in particular is significantly higher...." That is the PHLS. It may be these are your non-members that they are talking about, I am perfectly prepared to concede that. This is a very important statement which I think you perhaps need to discuss with the PHLS to make sure that it is the people who are outside your organisation who are responsible for this.

(*Mr Jermey*) Indeed. You mentioned the lower priced products that are being forced on some parts of the manufacturing industry by some of the cheaper supermarkets by some of the contract caterers and many of those are produced outside the control of the BBMA. We would like to see that tightened up.

1312. This does lead on to the Food Standards Agency because your document suggests that the Government should do the research and you should implement the procedures that the Government recommends. The White Paper is now saying that the FSA will have broad-ranging surveillance powers. That really does seem to spell the end of your system of self-regulation, does it not? Perhaps for the reputation of your industry that is a good thing because if there is that level of contamination in cheap sausages among your non-members perhaps the reputation of the British meat manufacturers will be improved if you actually lost your system of self-regulation and it was taken over by a statutory agency instead which could inspect a whole range of products and reassure the consumers that they are all safe and not just your members' products.

(*Mr Jermey*) I think there would have to be a lot of work to confirm that we would be happy with that.

(*Miss Ardagh*) What I understood from the White Paper what they mean by "surveillance" is the current work that is undertaken now which is marketplace sampling to see how products on the market, if you like, comply with the law, what level of contaminants or additives there may be in them. Our products are surveyed regularly. We have had two recently, one on nitrites and nitrates in cured products, very recently. There is another one ongoing on meat substitution in products. This is actually checking on the marketplace what is on sale and to what extent it complies with the law. It depends on the remit, if you like, of the survey. This would in no way substitute for our accredited standard.

[Chairman *Cont*]

1313. Can I just ask: there is a problem clearly at the bottom bargain basement end of the market.

(*Ms Ardagh*) Obviously.

1314. The PHLS's evidence is clear and I think I must respect the PHLS's judgment. What do you think the FSA can do to improve that? Do you think it should seek to do anything to improve that?

(*Mr Walker*) It can only do it by either putting a minimum meat standard in, or—

(*Miss Ardagh*) Which there is, of course, by law.

(*Mr Walker*) To monitor the meat going in. You cannot do that with the present MAFF system, you can only do that by having our system of checking the factory and the manufacturing plant and the recipe. Our EFSIS inspections go right to the chopping bowl and what is going in the chopping bowl. MAFF can look at the product from now until doomsday in the store but that will not solve the problem that you are referring to, Mr Chairman.

Mr Hayes

1315. Can I just briefly get to the nub of this that the Chairman is addressing. There seems to be a contradiction here. You are saying, and I am not unsympathetic to it, that the principal problem at the bottom end of the market is in handling, in preparation, in storage.

(*Mr Walker*) I would immediately suspect that.

1316. Okay, you suspect that. Then we are talking about a degree of regulation which really is focused on the product itself and the content of the product and even then we are sub-dividing that into a market sampling approach and a core approach looking at the process. It may be that achieves nothing if the principal problem is in the handling and the preparation.

(*Mr Walker*) I am sure that is right. You can make a sausage out of one hundred per cent rump steak but if the conditions under which it was made and the hygiene and standards of the handlers were not up to scratch the sausage will be just as dangerous as the cheap sausage that the Chairman is referring to.

1317. Precisely. So that type of regulation may be wholly ineffective.

(*Mr Jermey*) The problem is not regulation, we have sufficient regulation now, it is control and enforcement that is the problem. There is a huge variance across the country in the way that is carried out. That is the biggest impact the FSA is going to have on food safety.

Ms Keeble

1318. One of the contentious areas of the Food Standards Agency is its role in nutrition. That would presumably come back to things like also the recipe in sausages, not necessarily from the microbiological safety point of view but the point of view of what is thought to be better in nutritional standards. Do you think that the FSA should have that role?

(*Mr Walker*) No, because if the FSA is going to be successful it has got a full programme to achieve. If it gets involved in nutrition and arguments on nutrition I think that it will have too wide an ambit. When you get to the problems of nutrition and you get to the chemical analysis of nutrition, MRM is beef and it has the same nutritional properties as beef but the sorts of things which we try and do in the BBMA in raising the standards is on quality and that is what is important.

1319. One of the points that Mr Jermey raised earlier was that at the lower end of the market where the problem rests is in the retailers who presumably are the customers who set specifications which you would find unacceptable because presumably they are too low. In what way are they too low? Do you think that the FSA should have a role in intervening if a section of the food chain is setting standards which are too low for one that is further down?

(*Mr Jermey*) No retailer and no store purchasing officer would set standards which are too low but what they do is set a price.

1320. So it is the price specification which is too low?

(*Mr Jermey*) Absolutely.

(*Mr Walker*) That is right.

(*Miss Ardagh*) We need to supply food in this country for a range of tastes so that people can have more choice and also for a range of pockets. Some people can only, or only want to, spend a certain amount of money on food. Obviously food safety is paramount, that should never be compromised. For example, with compositional standards price can vary depending on your raw materials. If we set the standards too high you will cut off one end of the market.

1321. I understand that but if you are saying that one section of the food chain, namely presumably the retailers who so far we have had problems finding fault with, if you say that some of those are setting specifications in terms of costs which are too low should not then the fact be faced up to that in order to have safe produce there are price consequences and those have to be looked at and dealt with?

(*Mr Walker*) I think, coming back to the original way this question was started on the standard of low burgers and low sausages, the body that reported to the Chairman, did they say that they were British or were they imported?

1322. No. But what I am just asking about is this big argument about safe food versus cheap food. You are saying there are times where the specifications are low and what are the consequences then. The implication was this could be why the lower standard of food was unsafe.

(*Mr Walker*) No. The way the Chairman put the question and the way the question came to us was cheap sausage and cheap burgers. If you think of cheap sausages and cheap burgers we, in reporting to you, would think of the method of handling, of delivering, manufacture, cooking. That is what brought to my mind immediately the danger of the cheap end of the market, the way it is handled. At the top end of the market and through the supermarkets and the multiples it is such that you would not have those problems. Everything on temperature control, on product control, on quality of product going into the factory, on quality of manufacture, on quality of the product leaving the factory is covered. If you get

[**Ms Keeble** *Cont*]

the problem that you referred to it must be coming through the under the railway arches types of buildings.

1323. I just want to come specifically to the point Mr Jermey made which was about the fact that there was a problem in some instances of specifications being set too low and therefore this could be one explanation. I am just trying to get some clarification of what he actually said.

(*Mr Jermey*) Indeed. As Mr Walker just stated, this product can come out of factories in the railway arches. In many cases it is these uncontrolled food production units, meat production units, that can be supplying critical areas of our population. There is just not enough enforcement going on to ensure that that does not happen.

Chairman: I think if we may we will leave it there. I really am genuinely grateful to you. We were not getting at you at all, we were trying to elicit the truth. Indeed, I told the last lot that I would have sandwiches for lunch but I am afraid I am more likely to have a sausage. I was lying to them but I am telling you the truth.

Mr Collins: As long as it is a Cumberland sausage!

Chairman: Thank you very much indeed for your trouble, we greatly appreciate it. Thank you.

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supplying [illegible] of our [illegible] just not enough [illegible] going [illegible] that does not happen.

Chairman: I think [illegible] I really am enormously grateful to you. [illegible] getting at [illegible] sandwiches [illegible] to have sausage [illegible] you the truth.

Mr [illegible]

Chairman: Thank [illegible] trouble [illegible]

[illegible] referred to it must be coming [illegible] types of [illegible] of things which [illegible] particularly to the point [illegible] types of specifications [illegible] as could be [illegible] get some clarification.

Mr Walker: [illegible] practices in the railway [illegible] these [illegible] that can be [illegible]

[illegible] Absolutely.

Mr Walker: That is right.

[illegible] We need to [illegible] range of tastes so [illegible] and also for a range [illegible] only want to [illegible] food. Obviously [illegible]

[illegible] your raw materials [illegible] you will cut off [illegible]

[illegible] stand that but if you are [illegible] in terms of [illegible] there are pri[illegible] I think, [illegible] question was [illegible] they [illegible] imported.

[illegible] No. But what [illegible] about [illegible] cheap sausage and cheap burger [illegible] would think of [illegible] manufacturers [illegible] my mind [illegible]

HOUSE OF COMMONS SESSION 1997–98

AGRICULTURE COMMITTEE

FOOD SAFETY

MINUTES OF EVIDENCE

Monday 9 March 1998

Professor Philip James

Professor Hugh Pennington

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MONDAY 9 MARCH 1998

Members present:

Mr Peter Luff, in the Chair

Mr Tim Collins
Mr John Hayes
Mr Alan Hurst
Ms Sally Keeble
Mr Paul Marsden
Mr Austin Mitchell
Mrs Diana Organ
Mr Mark Todd

Memorandum submitted by Professor Philip James, Director, Rowett Research Institute (C103)

My analysis of the problems which characterise the system for protecting consumers from unsafe food is summarised in our original proposal for the Food Standards Agency presented to the Prime Minister in May 1997. This proposal, which has now been taken forward by the Government, forms the bulk of my submission to the Agriculture Committee.

Preparation of my report involved consultation with a wide range of people within a very short period of time. This involved people from various sectors of the food industry, food law enforcement bodies, consumer and public interest groups, a range of public health and scientific experts and advisers on constitutional issues. A special seminar was convened with a range of former permanent secretaries or chief executives of other agencies.

During the consultation it became clear that public confidence in food in Britain had been seriously undermined. This process also revealed, however, some very real failings in the current system for regulating food safety and food standards. Cosmetic reforms which sought only to restore public confidence would not be adequate. My research highlighted three key issues which encompassed most of the problems with the current system.

MAFF's Conflict of Interest

The first fundamental issue—and one which has received a lot of publicity—is the potential conflict which arises from the dual role of the Ministry of Agriculture, Fisheries and Food (MAFF) in protecting consumers and promoting British food and farming interests.

The secrecy which surrounded the decision making means that people are unaware to what extent these two interests have been offset against one another. Reports of MAFF officials acting as the industry—rather than consumer—advocates were frequent. Such reports came from officials from other departments or agencies, experts involved in advisory committees and others involved in the food policy field.

Fragmentation and Lack of Co-ordination

The second major weakness that we identified was the fragmentation and lack of co-ordination in the current system. This covered a range of issues. There were, for example, reports of poor co-ordination between MAFF and Department of Health. Some issues—such as nutrition, food hygiene and dietary supplements—were awkwardly divided between the two departments and the lack of single leadership in handling these issues was evident. There were similar tensions between the two Whitehall Departments and territorial departments, such as the Scottish Office.

In a similar vein, we found that the links between the veterinary world and the field of public health were poor. Many examples of the inadequate communication in this area were offered. An outbreak of disease involving food poisoning organisms on a farm, for example, may have been known about by veterinarians treating the sick animals for several years; but information was not passed to the people dealing with foodborne disease in humans, until there was an outbreak resulting from people consuming products from that farm. These institutional and interprofessional barriers seriously impaired liaison and communication which could prevent food poisoning. For this reason we recommended that a veterinary public health unit be created within the new Agency and emphasised the need to transform the link between the veterinary and public health worlds.

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In further discussions with the Royal College of Veterinary Surgeons, it was clear that there are issues around the academic and professional development of veterinarians—as confirmed in the recent report by Lord Selbourne. There is a need to review initial and postgraduate veterinary training to ensure that food safety implications of animal disease are given greater priority and to improve the exchange between veterinary epidemiology and human public health.

Another area where fragmentation and poor co-ordination was evident was in the field of chemical food safety. The structures for handling the chemical safety of food were described repeatedly as "chaotic"—with a great variability in the service provided in different parts of the country. The mix of publicly and privately owned public analyst laboratories in England and Wales further complicates the situation. We recommended that arrangements for chemical monitoring and analysis should be "a priority for review in coming months". Unhelpful competition between a whole host of agencies in provision of microbiological services was also evident. The government has acted on our recommendations by announcing, in the White Paper, a review of the public analyst service in England and Wales and of the provision of scientific services for local authorities in Scotland.

Food Law Enforcement

The third key issue—a further example of fragmentation—arises from the local enforcement of food law. The system whereby local authority environmental health officers and trading standards officers enforce food standards and food safety legislation has much to commend it. Most notably the detailed local knowledge of local authority enforcement officers and the neat overlap between food law enforcement and other local authority activities, such as licensing, was seen to be of value. On the other hand, the system is not without its problems. There have been complaints for some years that enforcement of food law is uneven—the law is enforced to different standards in different local authority areas. This variability could be due to different approaches to enforcement or due to discrepancies in resources devoted to enforcement—which has to compete with education, social services and housing. The number of officers devoted to enforcement varies considerably between authorities—accordingly the expertise on different food issues is variable. A compounding factor is that local authorities themselves express a frustration that they have received contradictory signals from central government in recent years. Thus, the introduction of the Food Safety Act in 1990 presented local authorities with a powerful instrument to be stringent in enforcing food law but during the drive for deregulation which followed soon after they were urged to take a more "softly, softly" approach.

We proposed that local authorities retain responsibility for food law enforcement, but that the Food Standards Agency should play a role in improving the effectiveness of that system. In particular we suggested that the Agency should be involved in coordinating, monitoring and auditing local authority enforcement. We recommended that the Agency could also have powers to take over some unusually complex and financially draining litigation from local authorities.

Proposed Food Standards Agency

The model we proposed to address these problems was a Non-Departmental Public Body—loosely based on the Health and Safety Commission/Executive—which would be both advisory and executive in its role. We proposed that the Agency be governed by a multi-member Commission of individuals with relevant expertise which would be responsible for providing Ministers with advice. We were conscious in our analysis that elected politicians must retain ultimate responsibility for policy decisions. For this reason, we recommended that the Agency should advise Ministers on policy and proposals for legislation. In this way, Ministers can take the necessary political judgements which accompany policy and legislative decisions—thus protecting democratic accountability.

We proposed that the Commission advise Ministers on all matters relating to food safety, food standards and nutrition. We proposed that this remit include:

- the microbiological safety of food;
- genetically modified foods, novel foods and processes;
- the chemical safety of food;
- the nutritional quality of diets and effect on public health;
- food standards and food labelling;
- aspects of animal health which may affect food; and
- public education and information on food matters.

Nutrition was included within this remit because it was a fundamental of a Food Standards Agency—as opposed to a Food Safety Agency—as is widely recognised abroad.

The absolute key to both the independence and accountability for the proposed Agency should be openness and transparency in all its activities and decision-making. The right to publish advice to Ministers will be a crucial safeguard for the Agency's independence and will open policy decision-making up to public scrutiny. Ministers will have to explain their reasoning when they deviate from the Commission's advice.

THE FOOD STANDARDS AGENCY WHITE PAPER

The Government has now developed these proposals into a White Paper *The Food Standards Agency: A Force for Change.* This White Paper follows the general thrust of my original proposal. The Agency as outlined in the White Paper would, in my view, still represent a major move forward and a real opportunity to reform the structures and cultures of food policy and food regulation in this country. There are a few areas of divergence. The White Paper proposes to leave all of pesticides and veterinary medicines licensing with the Pesticide Safety Directorate and Veterinary Medicines Directorate respectively where I had recommended that the Agency resume responsibility for the safety evaluation component of the licensing process. Alternative mechanisms are proposed for the Agency to become involved in the licensing process and an effective veto for the Agency is promised. Similarly, the White Paper proposes to leave operational responsibility for many on-farm issues with MAFF and other Agriculture Departments while giving the Agency wide-ranging powers to intervene to protect food safety at all stages, including the farm.

Given these modifications, the extent to which the Agency will be successful in transforming the safety of food chain from "plough to plate", will depend largely on it being pro-active. There are proposed powers for the Agency to act at all stages in the food chain. Further analysis is needed to determine whether the proposed mechanisms are robust enough to deliver success in these areas.

20 February 1998

Examination of Witness

PROFESSOR PHILIP JAMES, Director, Rowett Research Institute, examined.

Chairman

1324. May I begin by making two apologies to you? First that the House authorities got your name wrong on the notices of this meeting on the order paper. Professor Jones is not quite as expert as you on these matters, though I am sure there are some very distinguished Professor Joneses in the food safety area. May I also apologise for keeping you waiting for a quarter of an hour? We had a number of other items of business to discuss first and that is a discourtesy for which I apologise. May I express our deep gratitude to you for the written memorandum you provided as well as copies of the document which informed the Government's own consideration of this matter, your own report? We want to question you quite closely now on your view of the White Paper and the Food Standards Agency. Before we begin, I should be very grateful if you could share with the Committee a general sense of how you see the White Paper. You note in your memorandum to us that there are a few areas of divergency between it and your own report. I think we are of the view, and I hope we are right in this, that you are broadly satisfied with what the Government said in the White Paper.

(*Professor James*) Yes, that is quite right. The White Paper certainly reflects in mood and intent what I thought was required. The more one looks at the complexities of how to cope with the myriad problems with which we are currently confronted, the easier it is to pick holes with one or other scenario. If you look at the White Paper this is a first step in the development of the draft bill. It is only when one sees the draft bill that one will begin to work out just how things will happen in practice. It seemed to me that this was at least a good beginning.

1325. You also spoke of some need for further analysis to determine whether the proposed powers of the Agency can actually deliver substantial improvements in the levels of food safety offered to the UK consumer. Is that the case?

(*Professor James*) There is a fundamental problem relating to food safety in Britain which people have all taken on board now. The problem is not one of simply trying to reassure consumers and educate them into more appropriate behaviour in their cooking or storage of food, but that there is, with the transformation of the food chain, a series of quite complex technical and strategic issues that do not simply need monitoring but they need analysis, indeed the development of new schemes for combatting infections for example. We have a whole series of major issues and the question is: will this Agency have within its own compass the ability and eventually the expertise to analyse properly and to take effective action because without that the public is not going to be reassured. This has come through to me very clearly when discussing this with a whole variety of different groups, for example the Meat and Livestock Commission who do a series of analyses, the University of East Anglia and the social anthropologists—they have done a whole series of assessments of the public mood and what people want. There is an enormous amount of reassurance we are going to have to generate in Britain and that will not come simply by putting out pious messages of hope. The question therefore is whether this Agency will in practice have the strategic understanding plus the data and will they then be able to develop new schemes and assess these properly such that we cope with the problems which currently confront us. Whatever the nature, whatever the structure of the Agency, that is going to

[**Chairman** *Cont*]

be the challenge and that is why in my own report I indicated that we would be quite lucky to begin to change the public mood within three or even five years because it is such a big undertaking.

Chairman: Thank you for those general opening remarks.

Mr Todd

1326. To implement the proposals in the White Paper and indeed your own recommendations will require a team of people committed to that task. The likelihood is that those will largely be drawn from existing personnel in MAFF and the Department of Health. How do you view that prospect?

(*Professor James*) It is inevitable that the majority of the officials moving into the Agency will indeed come from pre-existing departments. If one did not do that one would in fact be in real trouble because there is an extraordinary competence, a true competence, within the Government departments concerned. One only has to go and sit in Brussels and see the depth of analysis that the British civil servants are capable of to realise that we had better be careful that we do not simply damn the system outright. The question really is: how is one going to have these experts as well as administrators operating in a mode where they take on board the modern dilemmas? The whole purpose of my proposal is that one should separate that from the traditional arena where the civil servants were always worried about what the political process was or what the industrial concern was. The political process is now moved up to the Commission level and the industrial issue is a practical issue that relates to the everyday problems they need to confront.

1327. Perhaps you would accept that one view of the culture of Britain's civil service which could be applied to these two departments is strength in analysis and administration and weaknesses in action. That would not be a culture we would wish to see reflected in this organisation, would we?

(*Professor James*) No, that is one of the challenges. When I did my original assessment, it seemed clear that the messages from the top down through the food chain had been very mixed. They changed so often that it was extremely difficult for people at the ground level to know what on earth they were meant to be doing. When one looked across Britain there was extraordinary variation in the quality of work and that was not being monitored in an effective way. There is an enormous amount to do and yes, it is absolutely right that to get things done properly is going to require a very significant change of culture, which is what I specified as one of the fundamental issues for this Agency.

1328. Does that mean a test of leadership? That would normally be what you would see as the key means of turning around an organisation and creating the right culture?

(*Professor James*) Yes, the leadership is going to be absolutely essential. One must have in that leadership group high quality people who are willing to confront problems and indeed get it wrong sometimes and recognise they have it wrong and then change tack. We have to change the culture whereby we do not expect always to be defending our previous decision willy-nilly. We have to move forward on the basis of whether it turns out to be right or not rather than what we first thought of.

Mr Mitchell

1329. It is a bit difficult to believe that the same people wearing a different hat are going to emerge as crusading figures, dynamos of food safety, when they have been deferential to political interests before then. Indeed your own evidence says that reports of MAFF officials acting as the industry rather than the consumer advocates were frequent. If that is the culture they are coming from what is going to change them?

(*Professor James*) That is why in my proposals—and it will depend on what actually happens—I think first of all that the commission—which will be the controlling arm of this organisation—has to be new and independent. The second is that we propose that a good number of the senior officials be externally appointed. We went through that loop and it was quite clear. It is the same if you take over any organisation. You have to change the culture, you have a real battle on and in fact the matter of leadership is going to be fundamental. You are going to need a mixture of new people as well as the pre-existing individuals who already recognise that they are going to have to change. In fact it is quite intriguing that within the Ministry of Agriculture some groups feel a great sense of relief and release.

1330. That could be at the escape from the Ministry of Agriculture, could it not?

(*Professor James*) That would never have crossed my mind!

1331. It is going to be a bit difficult to train them to go out and bite rather than just purring like pussycats.

(*Professor James*) I agree with that.

1332. What do you see as the role of the Agency? What exactly is it going to do?

(*Professor James*) Let us take something which is seemingly straightforward. You may like to choose your own subject and go with it, but if we take *Salmonella*, or would you prefer *E.coli*? You are going to get Professor Pennington on *E.coli* and he is much more expert than I so let us take *Salmonella*. How are you going to cope with *Salmonella*? What is the evidence on it? Is it true that in fact most of the chicken flocks of Britain are actually contaminated? How are you going to cope with that? Should you look at the Swedish model? How did the Swedes deal with the problem? If in fact we are going to monitor Salmonella, what about the slaughterhouse systems? Is it true that in fact there is almost universal contamination in slaughterhouses? How is one going to begin to overcome that? What are the strategic issues? You are going to need not only effective monitoring, but analysis. You actually have to have the veterinarians for the first time truly linked up with the Public Health Laboratory Service, something which still needs to be developed in this White Paper. How is one going to change the culture of the veterinary profession so they are not simply, but properly of course, concerned with animal

[**Mr Mitchell** *Cont*]

welfare but also concerned with human public health? That whole thing has to be put together in a completely novel way by this Agency. Then you have to say that it is very straightforward in how you tackle *Salmonella*. It is not straightforward at all. The Swedes took about 20 or 30 years to cope with the *Salmonella* problem. They still have a widespread use of antibiotics in Sweden, contrary to popular belief. How are we going to begin to cope with that? There is an enormous amount not only of auditing of what goes on but analysis of what the practicalities are and how you overcome the problems. This Agency has to have the capacity to be quite discerning at a strategic level as well as at a ground level.

1333. What is it going to do once it has done all that? Its role as a kind of advisory body does sound fairly plain. You get all this information, you get this approach, you bring all these bodies together, then what do you do? You advise Ministers. You have to go out and crusade, do you not? Be a bit of grit in Whitehall.

(*Professor James*) The proposal I put forward, and it remains to be seen whether that comes through, is that in fact you have a flood of data coming back and the question is what to do with it. The current proposal is that you have a commission which is distinct from the regulatory—very distinct, and that has to be understood—which looks at this and then proposes a whole series of new initiatives. Those proposals are now for the benefit of the public where it requires a change in the whole control and process through the food chain. Those proposals might be straightforward such that the Agency can immediately insist that it be carried out or it may require a fundamental change in the law, in which case the commission proposes the changes and Ministers have to tell Parliament whether or not they agree with it and then it has to go through the parliamentary process.

1334. You would want it to be a crusading body pushing its proposals on the public and via the public on Ministers.

(*Professor James*) It seems to me if the Agency is going to get credibility it has to be seen to be operating primarily in the public interest and it has to make itself clear in the public domain such that Ministers have to specify why they disagree with the Agency's proposals.

1335. Should it set targets? Should it set targets of getting food poisoning down on an annual basis or so many cases of *Salmonella*?

(*Professor James*) As you know, I have been asked whether in fact the Agency should set targets? I have a sense at the moment that we know so little about the true level of infection in the British food chain that that is the first task. If you set targets where you suddenly double or treble your capacity and sensitivity to discriminate infection you may paradoxically be improving the whole process whilst at the same time discerning a much bigger problem. Then one is going to be challenged by the public and by Parliament that this Agency is completely useless when in practice it is making headway. One has to be careful and sophisticated in the targeting.

1336. On the other hand if it does not, it is going to be criticised anyway for not doing very much.

(*Professor James*) Exactly. I actually think they are going to have within the Agency to set targets which are going to include process targets as well as the ultimate outcome. The only basis on which the Agency is going to be seen to make progress is to put the lid on some of these problems and then see them decline.

1337. Would it help politically if it reported to a parliamentary select committee, perhaps a special committee?

(*Professor James*) That is what I personally proposed.

1338. How would you prefer that to be? A committee just devoted to the Agency and its work or part of the general area of this Committee?

(*Professor James*) I am not expert enough, I regret to say.

1339. Neither are we.

(*Professor James*) If you look at the nature of the problems, you have issues relating to European law, you have issues relating to public health, to food industry, as well as agriculture and so on. In fact you probably at a guess—correct me—may meet on one occasion and you may delegate some of your members in Agriculture to come to some conjoined grouping with other select committees which have a legitimate interest in other broader areas. That may be the most appropriate way of going forward.

Chairman

1340. That is a refinement of what you actually put in your original document.

(*Professor James*) That is right.

Chairman: I think I would agree with rather more than your original recommendation.

Ms Keeble

1341. You mentioned the depth of your own concern about the lack of knowledge about the problems in the food chain. You have also mentioned in your report quite a lot about the levels of public concern and the need to bottom those by the work which is done by the Food Standards Agency. Could you just say something about how you envisage the FSA as being able to deal with public concern and in particular how it is going to deal with a very difficult aspect of dealing with the consumer as such?

(*Professor James*) One of the problems of dealing with consumers is that we have very little understanding of how to deal with consumers in Britain. We have tended to preach at them and we have not engaged with them in trying to understand why they are so anxious. It is quite interesting because if you look at the analyses which have been done worldwide, you discover that in relation to food it is almost a primeval concern throughout the different civilisations, throughout culture, because we have all known from time immemorial that food is fundamental to one's health. That is why there are traditions in different parts of the world over what we eat and so forth. When one looks at the analyses of consumer attitudes what they are terrified of is the fact that they are going into a shop and they essentially have no power of control or decision

[Ms Keeble *Cont*]

making over the quality and nature of that food. Yet they know, because they have been told so in the newspapers, that they could in fact succumb to a very serious lethal infection as a result. That is quite different from the normal way in which the public looks at risk analysis. For example, if you decide to take out a car you decide to take the risks associated with it and you make that minute by minute decision. When it comes to something as fundamental as food which you have to have for survival purposes, you do not make of your own choice a decision as to whether to go to this part of the supermarket because you are guaranteed that it is going to be without infection, or otherwise take a risk. You are not into that ballgame. So we are going to have to develop a completely different way of engaging the public in coping with what seems to be an irrational level of anxiety.

1342. I completely agree with that. The problem I have is in seeing exactly how it can be done. It seems to me that by and large there are several different ways. One that some of the research institutions have taken is that you involve people with marketing expertise in the food industry, or you can involve representatives who have an interest in the area, of whom there are several. What we do not seem to have here, or at least the Committee in looking at the material which is coming in, is an active food consumer lobby group, organisations with that as their sole prime concern. The other one is opinion surveys from time to time. Each of those has arguments for it more or less and each of them has weaknesses. How do you think it should be done?

(*Professor James*) The proper answer is that I am convinced I do not know what the answer is. That is one of the challenges of the Agency, to try to see how best to develop a strategy which is appropriate for communication and coping with people's concerns. There are three things which I am proposing which should be in place: one is the involvement of important consumer representations on the commission itself; that is a very important point. The second is a complete openness as far as possible in the whole process. What is very clear is that you do not influence public opinion simply by having, as you know better than I, the one-liner on television. It is a cumulative process whereby you have a whole series of expert groups and expert consumer organisations involved. Our proposal was that you did involve these consumers directly—one has to move through a process and it may well be that one needs the focus groups to work out why we are not getting the message across, because that is our failing. We must not think of the stupid consumer any more. There is going to be a need for an iterative process of learning as they go.

1343. How do you set about getting the consumer representation on the commission right in the first place? It will not work if, at the end of the day, when some sort of other problem comes along with food, which is bound to happen, and everybody says "We have this Agency. What is it doing about the problem?" there is a perception of "Oh, well, it's in the pockets of the industry anyway" because the membership of it is not quite right in the first place. How do you deal with the issue of getting consumer representation on the Agency to start with?

(*Professor James*) My proposal was that if you broaden the word "consumers" to "public interest"—and that is a very important broadening—therefore you do not get locked into the Consumers' Association, the National Consumer Council or the other 60 organisations which are intimately involved in this area. If you have a majority of public interest on the commission and in addition you have public interest groups involved in the committees as a principle and you have an open system, then you begin to put in place strategically those issues. You still do not cope with the problem, if you make a mess of this, that the Agency may be seen as completely in the pocket of the industry. Some of the consumer organisations when I spoke with them in my preliminary analysis wanted me to exclude all industrial groups. I do not think that is sensible. There are highly complex technical issues and it is important that one locks in the industrial sector. The question is how to lock it in without being totally governed by it and that is the challenge which I try to cope with structurally in the proposal which I put forward.

Chairman

1344. I find what you are saying entirely intellectually accurate and perceptive and right and proper, but when it comes to the practical detail, tantalising. I cannot quite grasp it and what it actually means in practice. What do these public interest groups actually mean? Who are they?

(*Professor James*) By public interest, I mean those people such as, for example—I am sorry, I should not say this—an independent academic who has an interest in public health. There is a public health alliance, there is the British Dietetic Association and so on and so forth, it goes on and on and on. It seems to me that they have a whole host of people who are extremely competent. My proposal was that you did not appoint somebody who is a representative of let us take the British Dietetic Association but by virtue of being who they are they command confidence with that sector and they are not seen to be in any one particular pocket. That is the challenge.

1345. Professions will be a very rich source of people for this.

(*Professor James*) Absolutely; professions will have to be a rich source.

1346. In your document on the Food Standards Agency published last year you said that surveys revealed that providing consumers with a more detailed understanding of, for example, biotechnology issues tends to amplify rather than allay anxieties.

(*Professor James*) Correct.

1347. That is a fascinating observation. It seems to make the task of the Agency even more difficult.

(*Professor James*) It does and that shows how the common perception we had for five or ten years that all you have to do is to educate these ignorant consumers is a complete misunderstanding of the process which is required. In fact we got this from social anthropologists and others and market research workers who had looked at this in great detail. The more you present the intelligent consumer

[**Chairman** *Cont*]

with a series of dilemmas which are being considered at an expert technical level, the more appalled they are by the judgemental nature of the decisions which are being made.

1348. You heighten anxieties rather than reducing them then. Can you point this Committee to any international examples where work has been done which gets these difficulties about right in terms of involving and informing the consumer?

(*Professor James*) We looked at that in considerable detail. I have been told—I am not entirely convinced this is true—that the Swedish model seems to be pretty good; we concluded the US model was not particularly appropriate, in fact the United States are now rethinking their whole system. We were very well aware of what Professor Jensen had put forward as a proposal to the Danes. We recognised that perhaps the Swedish model was one of the best but throughout the world, Australasia, United States, France, a whole series of countries now recognises that there is a major new problem in food safety and people ask why it is. The answer is a transformation of the food chain such as we have never had in the existence of mankind because we are shipping stuff all over the globe at a moment's notice and the food chain is completely different from ever before. That is bringing in a whole host of problems with which we have never had to contend.

1349. Sweden is the one you point us to most clearly.

(*Professor James*) I think so; probably.

Mr Hurst

1350. The White Paper leaves the enforcement of food safety standards with local authorities, with the Agency having the monitoring and auditing process. In your opinion what would be the best means for the Agency actually to ensure their job is done effectively and there is a fairly universal enforcement of the legislation?

(*Professor James*) That is actually one of the toughest problems with which I have had to contend. The natural response when you recognise that some of the local authorities have been frankly hopeless at coping with food safety is to say that should be transferred completely into the Agency. The more we looked at this in detail, the more, dare I say, simple, straightforward, perhaps even naive, that proposal was because environmental health officers are in everyday touch with the local community and know what is going on. They have a gamut of responsibilities but pick up immediately if a new food store is opened. How do you cope with that if you have selective Agency staff who do not have any other responsibility? It becomes a much more expensive and tedious and less discerning process. We finally concluded that the challenge was how to establish completely new requirements for the local authority staff. We were intrigued by the Health and Safety Executive's analyses where they perceived that they have an extremely good working relationship with local authorities where now they set explicit criteria which are required and monitor as to whether in fact the criteria are met. That whole area of how the Agency relates to local authorities is going to be one of the toughest to get right.

1351. You highlight in your memorandum before us that there is a variation between different authorities, the degree of enforcement, the sort of things they would pursue. In many ways is that not akin to a police authority, for example? The Home Office will provide a substantial amount of funds but the degree of enforcement of local decisions on policing will be taken at a local level.

(*Professor James*) Yes, but in the proposals I put in—and we will have to see what happens in the draft bill—I proposed, if in fact an authority was not operating properly, that the Agency should have the powers to take over and ensure that is done properly if need be. That is the first point. The second point relates to the fundamental problem—which we have not really taken on board properly in my view in relation to local authority analysis of what goes on in their area. That relates to the so-called home authority rule where you have, for example, a large manufacturing group in your particular district and the district is responsible for monitoring the effectiveness of this even though it is a mega national enterprise. That can sometimes impose enormous costs on that local authority. In fact they may be threatened indirectly in the sense that "If you make too much trouble for us and put up our costs, we will have to go elsewhere". This Agency is going to have to cope with that and potentially take over in particular circumstances on a national basis the proper monitoring, should there be seen to be a particular difficulty. It is very difficult to know where to draw the line but there is no doubt that is quite an issue for some local authorities.

1352. Will not so much of it be related to the allocation of financial resources as to enforcement? Again going back to the analogy with the police authority, they would never logically have enough money to enforce all of the laws that there are right across the board and the same is logically so with the Food Standards Agency.

(*Professor James*) You probably noticed that in my proposals it was almost a touchstone that I proposed that in fact the finance for that local authority should be channelled through the Agency. I did that knowing full well that this would be highly controversial politically. What I was wanting to do was to symbolise the importance of a priority being given to food safety analysis. We had the usual story from the local authorities, which is understandable as they have all sorts of crises to cope with and they should make those judgements. The challenge is going to be how to finance the work. Will it be through the levy system, a scheme whereby you have adequate resources properly to implement. I still actually believe, for what it is worth, that the mechanism whereby one can actually begin to guarantee that the work is done properly is for that money to be challenged through the Agency but that may be politically impossible.

[**Mr Hurst** *Cont*]

1353. That implies a ring-fencing of that money coming through the Agency. Would you envisage within that ring-fenced money smaller fences on particular projects which the Agency would indicate they should carry through?

(*Professor James*) If in fact we are talking about targeting of particular developments then the Agency will be wishy-washy and vague if it does not have a very clear open strategic decision-making process about what resources they are allocating to each of these particular problems. That is going to be really quite important.

Chairman

1354. May I just test this ring-fencing point before we move on? Every special interest group would argue that its own particular area of local government expenditure should be ring-fenced. There is a very strong case for ring-fencing education expenditure for example. Are you sure that we can actually do this and leave local government with any meaning?

(*Professor James*) I am not sure. I put forward the proposal of ring-fencing knowing full well that it would not be accepted because there are legitimate reasons why it should not be; the ones you have given for example. Nevertheless we are going to need some mechanism whereby if the ring-fencing does not work, does that then mean we get into a position where Lancashire or Devon County Council or whatever it is—

1355. Chosen entirely arbitrarily.

(*Professor James*) Yes—should actually say it is quite impossible and the Agency says it is not their fault; it is those guys who did not do what they were told? Under the proposal I have, if they do not do what they are told then the Agency has to take over that function when there is a crisis. Then the question arises of who is going to pay for that and what is the long-term tracking. That is going to raise all sorts of issues you are familiar with better than I in the political fray you live in.

Chairman: Thank you for that helpful clarification.

Mrs Organ

1356. Moving on to nutrition, you say, and I must admit I agree with you, that it is not a food safety agency, it is a food standards agency and therefore you argue that should include nutrition. As you said to my colleague earlier, we have had a history of preaching to the consumer rather than engaging. Would you like to outline to what extent you see the role of the Food Standards Agency in this area of nutrition and what representation would you like to see therefore on the commission? Maybe somebody from the British Dietetic Association. What should be the nature of the interface between consumer, between food manufacturers and the Food Standards Agency about nutrition?

(*Professor James*) I should have recognised, and I failed to do so, that nutrition would be a controversial issue. To me its inclusion was totally routine and self-evident from work done elsewhere: whether you are talking about the United States, Sweden, Scandinavia in general, you have to have nutrition in a food agency which is involved with public health. Not to have it means you are dealing with only one aspect, namely, say, infections or acute toxicology, which is not actually what the public is solely concerned with. If you look at the major controversies which have occurred over the years, quite often they are in a nutritional dimension. One of the big problems we have is that of intense industrial interest as we have seen over the last few months with the diet and cancer report and five years' ago or thereabouts with the heart disease report. These are issues which have enormous implications for different industrial groups. The question is how to handle that. If you now take a modern view of nutrition, where suddenly we are discovering—certainly over the last 25 years we have begun to realise—that some of the biggest public health problems in Britain have a strong dietary component, then how can one begin to develop policy when it is such a political problem and an industrial problem without: these are the very issues which an agency is meant to be engaged in? It seems to me that if you have "vested interests" which are political or whatever else you described and that involves nutrition, by definition the safest place for it is in an agency.

1357. Would you reject therefore the evidence of the Food and Drink Federation last week when they said that they believe it was only within the remit of the Food Standards Agency that as an industry they are delivering safe and wholesome food?

(*Professor James*) I know my good friends in the Food and Drink Federation extremely well and that is their particular view. They do not want nutrition in the Agency because they misunderstand the nature of the Agency. There is a commission which is making policy and that evidently has to deal with a huge range of issues: genetic manipulation, nutrition and so on. There is no difficulty about that; there are British committees already. Those should move into the Agency to do this in an open manner. The misunderstanding is this concept of the nanny state, that suddenly this Agency is going to tell every human being in Britain exactly what they have to eat for breakfast Monday to Sunday. That is mad. That is a failure to understand the difference between a commission and an executive arm which has to make sure that, for example, food industries do not misrepresent what is in their foods in terms of food labelling. That is an executive issue but we are not into the nanny state.

1358. Are you saying therefore that there should be information and engagement with consumers about nutrition which is coming out of the Food Standards Agency. How do you stop being the nanny state if you are starting to talk about diet, the good thing that we all want to eat more fruit and vegetables? To be furry round the edges is easy but when we are starting maybe to lay down how much red meat we should eat, how much alcohol we can take or whatever, when we get a bit more precise and a little more information, we then come into the nanny state. Or are we saying the Food Standards Agency should be engaging in this?

[**Mrs Organ** *Cont*]

(*Professor James*) Let us take this nanny state business on diet and cancer. I have suddenly been reading some remarkable reports in the newspaper in the last few days about what has been going on, most of it completely untrue. If you have an issue which relates, let us say, to cancer. Three, four reports in the last 18 months have suggested that increasing one's vegetable and fruit intake looks as though it could have a powerful effect on the development of cancer. What do we do about that? Let us assume for a minute that I am a vegetable manufacturer. I would love the Agency to say that please. Am I going to go overboard and say vegetables are the only thing? Who is actually going to produce this evidence in such a way that it is of material importance to the public? If you say cancer, heart disease, diabetes and obesity and so on are not important, you are wiping out the majority of the burden in terms of health in Britain. If you actually ask the public anywhere in the world as well as Britain what they are concerned about, they are extremely concerned about their health and one of their worst fears is that the information which has been provided for them is studiously manipulated by people who want to sell selected products. Who is going to be the independent source of valid inquiry? That is where I thought the Agency had a proper role, which actually the FDA, the Danish agency and the Swedish agency regard as a totally routine responsibility.

1359. Would you say that in a priority between the two, the nutritional element in the Food Standards Agency is a second order issue and the prerequisite is for safe food?

(*Professor James*) My view is perhaps unusual as a specialist in public health. There is ten times more ill health, in my judgement, which happens also to be a World Health Organisation judgement, which comes from the inappropriate nutritional quality of the diet compared with food borne infection.

1360. Would you say it is not a second order issue, it is the primary issue?

(*Professor James*) I put it forward as one of the four principal issues. I did not try to discriminate priorities.

1361. Can I assume therefore that you are not satisfied that COMA adequately fulfils the Government's responsibilities towards nutrition already?

(*Professor James*) I have to be careful as I am speaking as a member of COMA. The fact that there has been a lot of controversy about one or two COMA reports does not relate to the process in COMA itself. It is a question of how it is perceived and what influence there has been. Let me take one example from the last Government so I can take it out of the immediate debate. I produced a diet and health report in Scotland which was seen by the Secretary of State for Scotland as of enormous importance because the Scots have one of the worst health records in the western world. The Secretary of State instituted a follow-up process. This next report was not actually accepted by the English Ministers who when the Scottish diet action group report was developed did not wish to have that put out on an English basis because it was quite radical. Yet it was a ministerial committee. Why do we get into this sort of business where proposals and analyses should actually be subject to whether a minister happens to be politically sensitive or humanly sensitive to that dimension? Surely we need those experts involved to produce the case independently of the quirk of succession to particular posts?

1362. What representation would you like to see on the commission which is having this element of concern for nutrition?

(*Professor James*) Frankly I have not thought about it in that sense, which is interesting. I proposed there are 10 or 12 commissioners. It is more important that people have the capacity to take an overview. Talking to the former permanent secretaries and the former chief executives and current chief executives of agencies, it became very clear that you have to have people who are able to look at things in a broad light. It is wrong to specify a Joe Bloggs from this particular specialty or that.

Mr Mitchell

1363. I agree very strongly with what you have just been saying on nutrition but you are being very charitable in saying that food producers misunderstand. They understand damn well. They know you are going to be saying "Don't eat crap". They are spending large amounts of money on producing tastier and more interesting and more consumer alluring crap.

(*Professor James*) I would never have survived if I had produced such analyses in the public domain.

1364. No, of course not. I have not survived either and that is why I am here on the Agriculture Committee. The point surely is that the fact that the nutrition part of what your original report proposed has now been downgraded is a first victory for the vested interests.

(*Professor James*) If it is downgraded, it will be a very severe setback to the long-term future of the Agency. The Australian experience has shown that the Australian agency, which did not specify nutrition as absolutely clearly within its orbit, has run into a major problem. For example, various sources are suddenly saying that functional foods are not actually an agency issue but a health issue and therefore it has to be considered elsewhere. That is one of the most exciting developments for the western food industry, so-called functional foods. This field has to be considered in a context where you are unbiased in terms of your analysis of what is appropriate.

Chairman

1365. May I ask whether or not you are concerned that by asking the Agency to do all this from day one you risk overloading a brand new mechanism?

(*Professor James*) That has been one of the principal concerns of some expert scientists. I find myself quite confused by that. It is not as though you are establishing *de novo* a completely new system in a country which has been bereft of scientific analysis and so on. What you are actually doing is transferring into a different cultural and political context pre-existing groups and civil servants who

[**Chairman** *Cont*]

are well used to dealing with these things. It is actually a misunderstanding of what the issues are. My view would be that the executive has a major problem, which is self evident and immediate, of infection through the food chain. The commission, however, will be bringing in a whole series of expert committees and dealing with policy issues as the first part of its task. On that basis I do not see that it will be overloaded because it is simply a question of transfer.

1366. As a layman nutritional advice seems to have changed quite often over the 30 or 40 years of my adult life. Carbohydrates were all the enemy at one stage and fads come and go. Is there a risk that the commission, by endorsing what appears to be one particular passing fad, might damage its reputation, standing, on the issues of food safety?

(*Professor James*) The difficulty with that is that we are now coming to a remarkable new understanding of the nature of infections. We do not actually know how it is that you do not get an infection but I do exposed to the same infective agents. We do not quite know how it is that antibiotic resistance is transferred through the food chain. We do not actually know what the interplay is between the nature of the animal husbandry system and whether or not a particular infective agent takes hold. We have been changing our ideas on infection and the *E.coli* 0157 you are going to hear about shortly is a dramatic illustration of something which is comparatively new. In other words, it is not just nutrition which is coming up with new findings all the time. That is a pervading one. Nutrition is a renewed modern science and you cannot expect, if you have continuing understanding of what affects, for example, ageing, that we are not going to change our minds. The important thing is that you do not change your mind every fortnight and are very clear on what the basis of the analyses and development of policy truly is. We will then begin to make headway. You have to understand that if we come up with analysis which says that saturated fats are likely to lead to heart disease, those industries and other groups which are producing saturated fat will do everything in their power—and that is understandable—to rubbish that evidence. That is why it is so important to have independence and clarity in the development of policy.

Mr Collins

1367. You have been very scathing about the political process in your evidence this afternoon. You have talked about the political fray, you have talked about civil servants dancing in the aisles at the prospect of being liberated from political accountability. You even referred in a rather—if you will forgive me—extraordinary phrase, to ministerial succession being a quirk. I wonder whether we could introduce a word here which I have not heard from your lips so far this afternoon, that of democracy. I wonder whether you agree with Winston Churchill that democracy is the worst of all possible systems until you consider the alternatives. Is it not actually better that decisions of this importance to people's daily lives should be taken by people they can remove by election rather than by experts they cannot remove under any circumstances?

(*Professor James*) I feel chastened by the commentary. What I was trying to illustrate was that if you allow all the decisions to be taken in-house without analysis of what the background to it is, and I am not making remotely any party political point, that is why I actually chose a different grouping from the current one just to illustrate that point. In fact there have been absolutely magnificent Ministers, for example five years' ago, in relation to Health of the Nation. I do not even know what your political party is. Waldegrave, for example, was totally brilliant in his analysis of the public health dimensions of nutrition, which I happen to know about. There is a different issue. I am not scathing about a political process in the sense that I believe this Agency cannot be independent of that political process. What it has to be is manifestly open. Therefore if a politician for proper reasons says this Agency has it wrong, and in his judgement it ought to be doing X and Y, then the Agency does not have the power to make independent decisions. It has the power to make proposals independently which then come to Parliament for analysis, sanction, agreement or rejection. That was in our proposal and it is a fundamental part of a democratic system.

1368. I am very reassured by that. May I just press you a little on that? You did earlier in your evidence appear to distinguish between one sort of regulation or policy which would require going to Parliament to change legislation and so forth and other forms of action which the Agency would be able to take on its own behalf as an executive function and so forth. In what ways concerning the latter part, apart from the possible report on an annual basis to a select committee, which I say as a member of a very distinguished select committee is not necessarily the most effective means of exercising political control, what other means would there be of there being some sort of democratic accountability for those decisions which it took without needing changes in legislation and therefore without needing the parliamentary process to be engaged?

(*Professor James*) The first point is that those regulatory processes would have to be sanctioned by Parliament. Secondly, by virtue of being an open agency, those processes would have to be overtly specified. Thirdly, if one were talking about the way in which it has an impact either on industry or local authority, they have the legitimate basis for objecting. Those objections will come to Ministers, they will come to the parliamentary select committee. If in fact the Agency is damaging the interests of industry or the public, they should properly be called to account. It seems to me that if you are saying that every point of the regulatory process should be sanctioned by Parliament, then the evidence from the way in which the British have organised, for example, the Health and Safety Executive system is where you set in train a series of policies and within that policy you allow a reasonable amount of flexibility for coping with an emergency. It is in that context that I see that this Agency would have the power. It would not be a resource and an operation which is independent of parliamentary process; to do so, as you imply, would be disastrous.

[**Mr Collins** *Cont*]

1369. I am very grateful for that. As you know, much of the debate about the FSA is in terms of it being entirely independent from political influence. What you seem to be saying—I do not want to put words into your mouth—is that your principal concern is openness, that it should be able to produce its own evidence, but its decisions could, if need be and if done so in an open way, overridden by Parliament if that were what Parliament chose to do.

(*Professor James*) Absolutely. We went into that in great detail because we saw that there was great danger. Perhaps it did not come through clearly enough, in which case I apologise. We were very clear, as I listened to this debate, how you establish something which will actually gain confidence in the public domain because everything is open and everybody talks about it being independent of particular interests. Fine, but how do you make sure that it is still accountable to the democratic process. We were convinced, because of that, that it had to be located in London so that it was seen to be interacting on a regular basis with Parliament. That is the reason why we suggested there should be a sub grouping within the national territorial settings: Scotland, Wales and Northern Ireland, and that that should have some mechanism for being accountable to whatever evolved because I had no idea what the constitutional process might be after the election. It was precisely because of that democratic need and the question of the appointments of the commissioners, which has not necessarily been followed through in the White Paper precisely. We also went to the constitution unit and we had detailed discussions with former senior civil servants about the precise ways you ensured that Parliament was assured that this was not involved in the everyday political process but was fundamentally under the control of Parliament.

1370. What would happen in your judgement if the commission were to be deadlocked? How would the commission have a relationship with its chief executive? Do you envisage that the chief executive would be instructed by the commission or would the chief executive have a more cooperative and balanced relationship with the commission?

(*Professor James*) I sense that would be something which would have to be worked through in detail. When we looked at different agencies what seemed to become clear was that Agencies were most effective if you have a balanced commission debating where you do not change membership every few months. You need to begin to get a collegiate sense of ownership with what you are trying to achieve. The concept we picked up from the different Agency experiences was that the chief executive should be under the instruction of the commission, but again that would be overt.

Mr Collins: I am reassured that you are not talking about a brave new world of government by expert.

Mr Mitchell

1371. You report to us a serious loss of confidence in British food. Has that changed much since the report was published? Has it improved?

(*Professor James*) It is difficult. It may have improved simply because—do not misinterpret me—something has to be done about it. I am led to believe that in fact it is still very fragile. It was a fascinating response to beef on the bone. I was quite intrigued by that as it shows just what enormous publicity one can get out of some particular change relating to food. I sense that if we had another *E.coli* outbreak or another *Salmonella* scare we would again find the public instantly engaged. We are in quite a fragile state even though superficially the steam appears to be going out of the immediate crisis.

1372. How is the Food Standards Agency going to work with public confidence in this matter? How are you going to monitor it? I get the impression from what you say that people are all at sea really. They are going into a supermarket almost in a nervous terror. You argued a bit earlier on that the more they knew about scientific evaluation of some matters the more nervous they were going to get. What is the relevance of public opinion in this matter as opposed to purely scientific and objective advice and how are you going to monitor it?

(*Professor James*) There are techniques for monitoring public opinion, which you know better than I. There are ways of trying to work out what goes on. We do not have an instant recipe for how you cope with the public's perception of risk. This is a matter of intense debate at the moment, not only here but in the States and in Europe. How do you begin to communicate the whole process of relative risk? I am in the middle of trying to sort out the business of analysis of risk on BSE in the Brussels Committee and it is a nightmare. You can come up, as we are doing—Britain is ahead of the rest of Europe on this curiously—you can look at the quantitative mathematical estimation of risk and then the question is what is acceptable. The Health and Safety Executive and the Environmental Agency have a one in a million chance of death as the cut-off point for what is reasonable. I am not convinced yet that is going to be reasonable for food. In other words, if you have a one in a million chance of being killed is that a legitimate cut-off point? That is something we are going to have to explore in Europe and I dare say the Agency is going to have to think about it here.

1373. All that is scientific and actuarial.

(*Professor James*) Exactly.

1374. What is the relevance of public opinion to all this? Does it really matter?

(*Professor James*) One of the big debates is that this Agency has to engage public opinion.

1375. It has to lead it and advise it.

(*Professor James*) Yes, but the question is: should it respond to public opinion? My prime perception is that it ought to respond to public opinion in recognising what the public is concerned about. It should not simply necessarily do what the public is worried about but it should actually see that it has a role pre-emptively, proactively, to engage the public in trying to change their understanding of what we are doing.

Mr Todd

1376. Earlier you referred to a serious lack of confidence in British food.

(*Professor James*) That was a member of the Committee.

1377. In your original report. The word British in this context presumably meant food consumed in Britain as opposed to food necessarily sourced and manufactured here. You referred earlier to the complexity of the food chain and the components of it which means that many of the things we consume here are of course either sourced wholly or in part overseas. In a world of free trade, how do we grasp the fact that many of the things we may see consumed in this country are subject to regulation and control in some other state?

(*Professor James*) That is one of the dilemmas I do not think I did enough thinking about. The more I look at the problem, and I am involved in a global commission for the UN at the moment and if you realise that we are shipping substantially out of Africa and Mexico and China, how on earth are we going to cope, now the standard story is that the supermarket is formally responsible for registering and analysing the safety of these foods. It is going to be really quite a challenge to see how we can assure classic old-fashioned food safety in terms of microbiological and toxicological safety when we are dealing with foods coming out of third world countries where I know, because I have worked in many different third world countries, there is rudimentary control. That is going to be a big challenge but the challenge is there now and it is for the Agency to take this on.

1378. How do you suggest that challenge is addressed without introducing a wholesale regulatory framework at the borders which may run totally counter to most concepts of free trade in goods?

(*Professor James*) It is a fascinating question if you broaden the debate to the World Trade Organisation. If you look at what the proposals are in Europe and the debate between the United States and Europe about the World Trade Organisation, the presumption is that the free market, free flow of goods, is the primary requirement. We have to be rather careful about that because if you do that you then have a whole new dimension for example of biotechnological manipulation by western agricultural businesses. What is that going to do for third world farmers? There are enormous issues relating to the complete free market without thinking about the broader dimensions of safety. Professor Galbraith from Harvard proposed that food should not have been included in the World Trade Organisation. This proposal has some merit but it is a very complex issue.

Chairman

1379. On this question of surveys on confidence in food, are you aware of any particularly good role models which we should look at, people who are doing this work well and who are informing your thinking on this subject at present?

(*Professor James*) Yes, the Economic and Social Research Council has had a group of social anthropologists who, as part of a research project relating to The Health of the Nation were engaged on a conjoined collaborative basis, and still are I understand, in looking at this. Then the Food Research Institute in Reading, as part of the BBSRC are also engaged and industrially there is a whole series of monitoring agencies, commercial agencies, as well as the Meat and Livestock Commission. There are several organisations which regularly undertake surveys to try to work the thing through and I am sure that they could help you in your inquiry.

Mr Hayes

1380. You talked earlier about consumers feeling they had no power over decision making in respect of food choices. Then in a contradictory fashion in a sense you said that the more information people had the more worried they became. In your written evidence you suggest that the absolute key to guaranteeing the independence and accountability of the Agency is that it is open and transparent in all its decision-making activities. Clearly that is laudable and you mentioned it several times again today. What practical mechanisms would you put in place to deliver that sort of openness and accountability in the Agency's dealings?

(*Professor James*) I proposed in a rather radical way—but knowing that one would have to work it out—that much of the Agency's deliberations should take place in public. One has to move towards a much more public open system of debate but, as I am sure you would recognise, there are some problems which are horrendously complicated. I have been in many debates where we really did not know what decision to make in the first round. If one had tabloid journalists having fun we could still be in trouble. This business of openness is something which really has to be worked through and culturally in Britain we are not used to that process. On several government committees it is quite interesting how the most expert scientists resent being challenged in a public dimension. That is fundamentally wrong. We have to change the culture of the scientific community in Britain. It is going to be a slow process and I think we have to move into that open manner. What you in practice do from the consumer's point of view is you engage the women's magazines if you are talking about shopping. The journalists are quite often really quite sophisticated individuals who are trying to work out how to transfer appropriate messages to their readership. If you talk to them they eventually realise that you are not trying condescendingly to give them information that they pass on. You suddenly realise that they have a legitimate interest in trying to develop systems. So you can develop a whole group of people who become part of that cultural assurance to the consumer that in fact their interests are being looked after; that cannot be a con trick, it has to be part of the process of doing something if there is a problem and being manifestly open if a problem does arise.

[Mr Hayes *Cont*]

1381. You have been even more specific on previous occasions. You have called for public access to agendas of the Agency, ministerial documents for advisory committees, most of which you claim should meet in public.

(*Professor James*) I am sorry, I should have said that.

1382. The Government takes a rather different view if the White Paper is to be taken as their view. They talk about the public having access to information provided by the Agency which really is a bit like the difference between reading a Raymond Blanc recipe in a women's magazine and going to eat in his restaurant, is it not? It is a very watered down form of what you were calling for. Are you not worried that the White Paper has in effect diluted what you called for?

(*Professor James*) To be frank, the major objection to the openness comes certainly not, as I understand it, from what I have heard Ministers saying in public or indeed in private. I think the objection to the openness comes actually from the scientific community. I have been in special meetings with chairmen of expert committees and they have given myself and the chief medical officer 20 reasons why you cannot have the public involved in such complicated and very sensitive issues. We have a scientific community that has to go through a cultural shift quite frankly. How we do that I do not know. I speak as a scientist where I have found myself saying the wrong thing or in an inappropriate way and when challenged by a consumer organisation they turn out to be much more sophisticated than I gave them credit for. We have to take on that challenge.

1383. I want to be clear about this. What you are actually saying, interestingly, is that scientists are perhaps wary of things they might say inadvertently, perhaps being rather too honest, which will be misinterpreted by press and public.

(*Professor James*) Correct.

1384. Whereas politicians who are more accustomed to these things are rather more confident they represent things in a slightly more acceptable way.

(*Professor James*) Yes, as politicians you are far more sophisticated in engaging the public than any boffin such as myself.

Mr Hayes: I am delighted that you think scientists are less sophisticated than politicians. Marvellous!

Chairman: Flattery is the way to the heart.

Mrs Organ

1385. Talking again about engaging with consumers and the public from the FSA, in the light of recent food difficulties, ranging from *E.coli* to BSE to *Salmonella*, what concrete measures can the FSA really take to raise consumer awareness of food skills, about food hygiene and food safety issues? Should they be doing regular editorials to food magazines as a way in? In what concrete ways do you think they can be doing that? Secondly, how can we start to rebuild consumer trust in our foodstuffs and our food technologies?

(*Professor James*) On the first point, it has become very clear but I am not sure I have convinced everybody that if this Agency is going to be effective it has to have an extremely good communication unit. It must not simply be the disaster communication unit. If you would simply have a communication unit that only gets on T.V. when there is a crisis, it is very clear that that is going to be the end of the Agency as far as the public is concerned. We got that message from the Health and Safety Executive who have an enormous literature which is proactive and positive and helpful. That is a fundamental component if this Agency is going to have credibility with the public. The second thing in building trust is that you will not build trust until the public with all the other journalists and the other investigative people are convinced you are actually doing something in your Agency. If you simply flannel, you are not going to get anywhere so this Agency has to be seen to be taking active steps which are legitimate to improve food safety.

1386. You said when you flattered us that politicians engaged better with the press. Obviously with this communications unit we are not talking about a Mandelson spin doctor communications agency here are we, we are talking about somebody that is going to engage but have no taintedness from it? At the same time we have seen those awful Harry Enfield sketches where it is public health notice number 132, do not put the baby into the fire, type message. Who are we going to be employing to do this? Who is going to be this communications agency? I take on board what you say to get it across but how are we going to do it?

(*Professor James*) That is going to be one of the biggest challenges. If you talk for example to the Health Education Authority they would love this Agency to commission work with them. That may be part of the process but one has to take it in a different dimension. If you look at what is happening at a local and regional level, what are the new mechanisms? For example, what are the new mechanisms which the new Minister of Public Health is going to engage in? How do we see public health developing in Britain? What role does that Agency have in making sure that the material which is going across at school level is appropriate? How does it ensure that? Does it go directly locally? Does it go strategically through the Department for Education? There is a whole host of big issues to be sorted out but simply to be putting out notice 103 each Monday morning is a recipe for disaster.

Mr Marsden

1387. Earlier on you said that advice to the public should not change every fortnight but I guess every six months is okay then because last September we had the COMA report on diet and cancer which was being trailed and clearly resulted in an enormous amount of public confusion over the consumption of red meat in particular and this business over whether the average consumption should actually be reduced as part of that advice. My question first of all to yourself is: in your advisory capacity how were you

[**Mr Marsden** *Cont*]

involved in that episode which did cause an enormous amount of harm to public advice and the public themselves?

(*Professor James*) Thank you for allowing me to put on public record that the advice which was issued by the Minister of Health in September or thereabouts was a piece that came from the main COMA committee with which I was linked by telephone where I simply agreed. I listened to the debate and they concluded whatever they concluded and I agreed with that and as I understand it—I stand to be corrected—the issuing of that statement was precisely as had been agreed by the Committee. What happened subsequently was that the officials and the chief medical officer, as I understood it—I was not involved—recalled the Committee because the working party which had produced the working framework for this document had not taken part in that September meeting. A further debate took place where I was physically present and it was decided that the working group, as part of a compromise, wanted a slight difference in wording. It was decided, because it had become such an obscure discussion, that a small working group of people would actually craft that final statement which to my knowledge is what is in the recently published report. I was not part of that working group. What you have read in the papers is actually totally untrue. I was involved previously when I was asked by Ministers to take part both in the world cancer research project and the COMA report. By a series of quirks we discovered that there had been a change in the text without the whole of the Committee being involved. I did not know that. Somebody else on the Committee objected and I backed them in saying that the Committee as a whole should actually be taking whatever decisions were taken. As far as I am aware, certainly I never discussed anything with Ministers about the level of any recommendations—please note—and as far as I know the Ministers at no stage were engaged in anything other than trying to ensure that the Committee was operating in a manner which we have just discussed in relation to the Food Standards Agency, independent of all vested interests whether political or otherwise.

1388. Are you saying therefore that you disagreed with the Committee's recommendations at that stage, that, if I recall rightly, three ounces of red meat as an average should be reduced? You are saying that you disagreed with that viewpoint.

(*Professor James*) No, if that was the September issue, I went along with that. What they now say is that it is only when you have 3.1 ounces on board that you should consider reducing. Do you know what the debate was in September? It was totally fascinating. If in fact you suggest that people might reduce—talking about red meat and not increasing vegetables, which is much more interesting—the meat consumption of the upper echelon by definition you reduce the average. It became an amazing thing. Are we going to recommend that the average falls? Well the average will fall. Do you recommend the average should fall? I heard them speaking. Effectively they were recommending the high ones fell so in effect they were recommending that the average fell. Then people said that actually the statistics are such that you can only be reasonably confident of the data on intakes above average, so it became an extraordinarily obscure point. At that point I retired and let them decide on the minutiae of the text.

1389. Would you agree with the Chairman of the MLC who said that the preempting of the full conclusions of the COMA report which took place last September was a shame and regrettable?

(*Professor James*) I am not sure. I have not seen that report but it seems to me.

1390. Which report is that?

(*Professor James*) You just made a quote.

1391. From oral evidence to ourselves.

(*Professor James*) I see. As I understood it, as far as the whole Committee was concerned it was a full meeting of COMA where everybody except myself was in attendance. I could be wrong about that; I was on the telephone. Whatever those conclusions were, they were unanimous at the time. It was only the minute, in my terms—change which accrued six months later by virtue of the working party coming back in and where they were unhappy with the specification simply that the average itself should be recommended as being reduced.

1392. You believe that basically British beef is totally safe for the average consumer and it is tasty, nutritious and there is nothing to worry about.

(*Professor James*) You should have been at my lecture where I had unfortunately the task of putting across the world cancer research report I have just written and sent off yesterday to the UN commission that there are substantial nutritional benefits, health benefits, from modest amounts of meat and the only issue is at what level of total intake should one begin to express concern. I will not tell you what my personal views were to both the world cancer and the British report when I saw their technical analyses, because it is not appropriate for me in my position constantly to amplify the tendency of everybody to say that all the experts on nutrition disagree. These are highly complex issues. I am actually willing to go along with the current reports because they are a reasonable overall view of the evidence as it is and it is quite clear that we need a lot more research to be truly clear about how diet can prevent cancer. If you look at it strategically in a global way there is no doubt in my mind that some factors, mysterious quite often at the moment, associated with particular foods, seem to enhance or reduce the risk of cancer.

1393. "Willing to go along" is hardly a resounding endorsement of British beef, is it?

(*Professor James*) Let me just say formally speaking that from my analysis of the BSE issue, that I am embarrassed to tell you that it is not just myself but many of the members of our Brussels steering committee believe that meat and meat products from Britain are safer than in most other European countries at present.

Chairman

1394. We note that and thank you for that. May I just be clear. Paragraph 9.3.9.2 of COMA is the crucial paragraph which held up the report for five months. Do you have any idea why it held up the report for five months incidentally? Why did it take so long to get this final agreement?

(*Professor James*) I do not have a clue. Curiously enough I have not inquired. I have been involved in the Brussels BSE affair.

1395. This is the paragraph about meat consumption. Are you now entirely content with the paragraph as it stands in the COMA report?

(*Professor James*) I confess I have not read it since it was printed but I assume it is the same as we agreed.

Chairman: It looks very sensible to me. We could go on all day, it is a fascinating subject. I am very grateful to you. It has been a very important session for us. We have run late and I apologise to our next witness for that. We have appreciated the time you have given us. Thank you very much indeed.

Memorandum submitted by Professor Hugh Pennington (C101)

I thank the Committee for its invitation to submit evidence regarding current issues of concern relating to food safety which a Food Standards Agency will have to address, and on the appropriateness of the proposals contained in the White Paper *The Food Standards Agency: A Force for Change* in addressing these issues. In this memorandum I have concentrated mainly on microbiological matters and on issues relating to *E.coli* O157 (including the Pennington Report).

PERSONAL BACKGROUND

I qualified in medicine in 1962 and have held academic posts in bacteriology and virology in London, Winconsin (USA), and Glasgow; I have been Professor of Bacteriology at the University of Aberdeen since 1979. I have conducted research on a wide range of bacteria and viruses that cause disease in man and farm animals. In response to an initiative from the Scottish Office, I set up the Scottish Reference Laboratories for *Campylobacter* and *E.coli* O157 in Aberdeen in 1992. In 1996 I was asked by the Secretary of State for Scotland to chair an expert group to "report on the circumstances leading to the 1996 outbreak of infection with *E.coli* O157 in Central Scotland, the implications for food safety and the lessons to be learned".

THE PENNINGTON REPORT

In its deliberations and its interim and final report my expert group considered the level of food safety risk at all stages of the food chain and made recommendations for improving the methods employed to minimise these risks. Although our considerations and recommendations arose from considerations on *E.coli* O157 they were and are not organism specific. This is because we considered a range of hazards whose diminution or removal will lead in the overwhelming majority of situations to a reduction of transmission to man or other important food poisoning bacteria eg *Salmonella.* Our reports make clear our opinion that to achieve a reduction in bacterial food poisoning, action is required at all stages in the human food chain. Because of the general implications of my expert group's reports for food safety, and because they illustrate the consequences of failure in our food safety defences, I submit them to the Committee as part of my evidence.

The Government has accepted all the recommendations in the interim and final reports. Their implementation requires action by not only producers, processors and retailers of meat but also educationalists, doctors and other health care workers, non-profit making caterers, and members of the general public as well as by Government departments and agencies, institutions in the National Health Service, local authorities and employees of these bodies. A summary of progress towards implementation—as known to me—is presented in Annex 2. In the past I have publicly expressed concern about the slow rate of progress towards the introduction of selective licensing for butchers. The Draft Regulations were issued on 23 February 1998 and consultation is now under way.

TRENDS IN THE INCIDENCE OF BACTERIAL FOOD POISONING IN THE UK, AND THE EFFECTIVENESS OF THE SYSTEM OF NOTIFYING CASES OF FOOD POISONING

Current trends

The review of trends presented in the Parliamentary Office of Science and Technology (POST) report "Safer Eating. Microbiological Food Poisoning and its Prevention" (October 1997) is comprehensive. It presents statistics up to the end of 1996. An update for Scotland for 1997 was published by the Scottish Centre for Infection and Environmental Health (SCIEH Weekly Report, 6 January 1998, Vol. 32, No. 98/01). It showed an increase from 1996 in the number of laboratory reports for *Campylobacter* (108 per 100,000 for 1997, 99.4 for 1996, the rate exceeding 100 for the first time ever) and for *Salmonella* (65.3 from 63.7). Only a small change occurred in *E.coli* O157 rates (8.29 from 9.87) despite the very large central Scotland outbreak in 1996. The marked regional variations seen in previous years persisted, particularly for *Campylobacter* and *E.coli* O157. For mainland health boards, rates ranged from 227 (Forth Valley) to 65.5 (Greater Glasgow) for *Campylobacter,* and from 40.5 (Borders) to 3.15 (Fife) for *E.coli* O157. Major changes in regional rates were the 188 per cent increase of *Campylobacter* identifications in Forth Valley and a 79 per cent increase (from a high level) in *E.coli* O157 isolates in the Borders. Whatever the deficiencies in these statistics as a measure of all food poisoning cases—and as I show below these are easy to demonstrate—it has to be concluded from them that food poisoning is not only common but is increasing in its incidence.

Notification of food poisoning cases

I agree with the POST report analysis of the imperfections in current statistics. It is right to emphasize that none of the available indicators directly measure food poisoning rates.

The *notification* of food poisoning produces information which is only of value as an operational tool to indicate the emergence of a local health problem. It often fails in this task. Despite being statutory, its value as a strategic weapon to assist in risk reduction or disease control is rhetorical rather than scientific. It is part of a notification system for infectious diseases which contains much historical baggage. Root and branch reform is long overdue. Major weaknesses are under-notification, uneven notification, and a complete lack of reference to causative agents.

Laboratory reports to CDSC (in England and Wales), SCIEH (in Scotland) and DHSSNI (in Northern Ireland) have at present no statutory basis. The main problem with this statistic is that it only refers to cases which present themselves to a doctor who then investigates them bacteriologically with success—a minority of patients with food poisoning. The proportion of cases that form this minority is currently estimated by guessing. The main utility of laboratory data is that it demonstrates changes in the incidence of different infections over time. This measure is affected by alterations in laboratory practice such as improvements in the sensitivity of tests (recently developed *E.coli* O157 tests are ten times more sensitive than their predecessors) and by changes in the pattern of referral of samples for testing. The size of these effects is unknown because we have no way of directly estimating them.

A third measure is the numer of outbreaks. Its main value for organisms like *E.coli* O157 (but not for *Campylobacter*, which rarely causes outbreaks) is as another indirect indicator of organism-specific trends. As a measure it is complementary to laboratory reports because its disadvantages are different. The reasons which determine whether a patient seeks medical advice and whether a general practitioner investigates a case bacteriologically will often be different from those which determine the identification, investigation, and reporting of outbreaks.

Typing of food poisoning bacteria

The way that laboratory data is used often oversimplifies the microbiology of food poisoning. Categories like *Salmonella, Campylobacter, Listeria*, and even *E.coli* O157 are not homogeneous entities but are made up of subsets (technically known as clones or sub-clones) of organisms which may behave differently from each other. *Salmonella* provides the best understood example. The POST report describes differences between *Salmonella enteritidis* PT4 and *Salmonella typhimurium*, for example: "*S.enteritidis* PT4 showed a thirtyfold increase from around 500 isolates in 1981, peaking at over 17,000 in 1993, in contrast to a relatively static picture with *S.typhimurium*" (p.30).

It is possible to make confident statements of this sort about different kinds of *Salmonella* because of the existence of a long established, genetically soundly based, and universally accepted typing scheme. Various schemes exist for other food poisoning bacteria but the degree of consensus about their utility and scientifc standing is much less. This is partly because more work needs to be done on variation in these organisms and the best way to measure it. UK bacteriologists have also found it difficult to reach agreement about how best to build typing schemes using existing methods—particularly the molecular fingerprinting techniques developed during the 1990's. In 1992 the Department of Health brought together a group of experts to do this for *Campylobacter*. As a member of this group I have observed rather slow progress. Its conclusions to date have to be regarded as interim.

The typing of bacteria is important because it is a powerful technique for tracking the spread of a particular microbe. Not only is it of great value to outbreak control teams, but it also provides essential information to those investigating links between animal sources of infection and human cases. Progress in our understanding of the epidemiology of food poisoning and the development of control strategies, has been impeded by delays in achieving consensus about typing strategies, particularly a reluctance to accept that new high resolution molecular methods can have very significant advantages over traditional serotyping and phage typing techniques, and by slow progress in the validation of new methods.

Important instances of these problems are easy to find. Thus the lack of a validated high resolution system for *Campylobacter* typing hinders attempts to find its sources and routes of spread. For example, although there is plenty of data to show that the contamination of chickens is common, it is not at all clear whether the bacterial strains isolated from birds are the same ones that cause food poisoning in man. There is now a reluctance by some investigators of human cases to submit *Campylobacter* isolates for typing or even to bother looking for sources of infection because they have found the traditional low-resolution methods to be so unhelpful in their epidemiological work. A lack of consensus about the ability of different types of *Listeria* to cause disease in man was a central issue in the legal proceedings in 1995 in Scotland which followed an Application under the Food Safety Act by a local authority against the manufacturer of a blue cheese made from ewe's milk. The failure of the Application had serious financial consequences for the local authority. It emphasised the practical difficulties of applying the precautionary principle. The lack of high resolution typing methods has impeded the development of effective guidelines to control bovine tuberculosis. Although the transmission of bovine TB to man has been successfully prevented by cattle surveillance and slaughter and by milk pasteurization, eradication of the disease in cattle remains unfinished business. Much effort and money has been spent in trying to improve control measures predicated on the hypothesis that the likeliest source of infection of cattle is the badger. Whether these animals really transmit TB to cattle is a question which high resolution typing could resolve. (J. Krebs *et al*, Bovine Tuberculosis in Cattle and Badgers. MAFF Publications London. 1997).

SIGNIFICANT GAPS IN CURRENT SCIENTIFIC UNDERSTANDING OF, AND STATISTICAL INFORMATION ON, FOOD SAFETY ISSUES AND MEASURES WHICH COULD BE TAKEN TO REDUCE THESE GAPS

General principles

Human food-borne bacterial infections that come from animals cause 100,000 cases per year that are serious enough to be investigated bacteriologically. Whatever proportion of the total number of food poisoning cases this represents, it is a burden of disease that is unacceptable in health terms to the victims and in its economic costs to society. It is particulary so because much—or maybe even all—of it is in theory preventable by cost-effective measures. Because of these factors it is worth giving food safety research programmes high priority. They should have as their fundamental aim the development of effective methods to prevent people eating manure microbes. For this it is essential to develop a secure understanding of the routes of transmission of infection from animal to animal and from animal to man. This understanding will allow critical control points in the food chain to be identified and methods to be developed to interrupt transmission at them. It will also allow the possibility of eradication at source—in the animal reservoir—to be considered. The success of the Swedish control programme for *Salmonella* is paradigmatic here.

Significant gaps in our scientific understanding

1. A lack of knowledge about the natural history of *E.coli* O157 and *Campylobacter* in their animal hosts continues to be a serious impediment to our understanding of geographical variations in incidence for the former and the development of rational control measures for both. Important questions to be answered for *E.coli* O157 and its other VTEC relatives that cause disease in man are:

   1. What are the patterns of carriage in individual farm animals?
   2. What are the patterns of carriage in farm animal populations?
   3. Can any factors be identified which affect 1 or 2?
   4. Do wild animals play any part in maintaining the presence of the organism in farm animals?
   5. How do geographical variations in carriage in farm animals and the occurrence of particular subclones of the organisms correlate with incidence rates and the distribution of subclones in human cases?

There is one outstandingly important question for *Campylobacter*. What is the source of the strains that infect man?

2. For success all the studies listed above have as an absolute requirement the availability of typing methods with a very high resolution and a secure genetic basis. It is also essential that they can be done quickly and cheaply with very low levels of inter-laboratory variation. Effective surveillance schemes also need typing methods with these proprites. Some progress towards the development of such tests has been made, but genetic studies of variation in *E.coli* O157 and *Campylobacter* and molecular cataloguing of the genes that enable clones and subclones to cause disease in man are now needed to allow the full power of modern molecular biological methods to be exploited.

3. Complementary to work aimed at reducing or eliminating the bacterial load in animal hosts are studies which address the improvement of controls later in the food chain. The main question to be answered here is a simple one. Why do food poisoning rates remain so high in the face of the abundance of control mechanisms currently in place? Is it because ineffective methods are being used or is it because of failures in the application of controls that work? Are important critical control points not being addressed?

FOOD STANDARDS AGENCY

Professor Philip James' Green Paper identified three major reasons why public confidence in the effectiveness of the current food safety system has eroded over the last decade. They are the conflict of interest caused by MAFF's dual remit of food safety and food industry sponsorship and the way this conflict has been handled; the fragmentation and lack of co-ordination between the many official and professional bodies involved in food policy and in the monitoring and control of food safety; and an uneven enforcement of food law throughout the UK. I agree with this analysis.

The Government's White Paper outlines a structure which addresses these problems by proposing the creation of a single Agency at arm's length from Government, with its essential aim the protection of public health in relation to food, a statutory remit across the whole food chain, and with a monitoring role over the whole food chain with powers to act if there is a failure in the system. I believe that these proposals appropriately addresses the three major problems identified by Professor James.

Whether the creation of the Agency will lead to improvements in food standards—with reductions in the number of cases of food poisoning and a return of public confidence—will depend on its performance. The proposed structure gives it the *potential* to do all these things. Active and effective management of the boundaries and relationships between the Agency and other organisations concerned with food standards will be essential for success. The White Paper highlights a good example of this by pointing out that the Agency (para 2.10) will need to secure the confidence, support and co-operation of all sectors of the food industry. The power of large food processors and retailers to maintain and further raise standards in their own businesses and in those of their suppliers is very great. The Agency will have to work out how best to encompass the benefits of this in its own work while at the same time maintaining its independence.

I have concerns about three sections of the White Paper. They all address boundary issues.

Research and Surveillance

The White Paper's description of the area over which the Agency will have responsibility for co-ordinating and funding research seems to indicate that this will fall short of that recommended by Professor James.

It is not easy to determine from these paragraphs (2.32–3.34) exactly what the Government's intentions are; they focus mostly on activities which will not be the responsibility of the Agency. The proposed case-by-case reviews of the borderline programmes relevant to the responsibilities of both the Agency and Agriculture and Health Departments might provide a mechanism for working out ground rules to determine boundaries. On the other hand they could be seen as providing an opportunity for these Departments to limit the role of the Agency. The proposal that co-ordination requires the establishment of R & D Consultative committees implies that a good deal of research which the Agency should know about will remain with other bodies. In some areas at least the existence of these committees could constrain the freedom of the Agency to set its own research agenda. It is to be hoped that they will not impede the ability of the Agency to "be open and consultative in its approach to research" (para 3.27).

Surveillance and Control of Pathogens in Live Animals

It is proposed that "the powers available to Agriculture ministers under the Animal Health Act will . . . normally be the most effective vehicle for introducing statutory measures relating to live animals on the farm (and will be the only vehicle for dealing with zoonotic diseases which are transmitted through non-food routes). The preamble to this states that "food safety is frequently only one among a number of objectives for statutory measures dealing with animal disease". For traditional food poisoning organisms such as *Salmonella* these proposals are sensible, because this organism causes disease in farm animals as well as humans (although it is open to question how well they could cope with the new developments and novel organisms, qv BSE). For *E.coli* O157 they are less logical. One of the few certain facts about the behaviour of this organism in farm animals is that it does not cause disease in them. Under the proposal in the White Paper responsibility for controlling human infections by it would remain as uncoordinated as they are at present. The Agency should be given an explicit lead role for this organism and for any other pathogen transmitted from animals to man primarily *via* food but only causing disease in the latter species.

Veterinary medicines

The White Paper has not accepted Professor James' recommendation that responsibility for the safety of veterinary medicines should transfer to the Agency (para 4.25). When he made this recommendation he highlighted current concerns about widespread antibiotic resistance. It is certain that this problem arises from antibiotic use for treatment, prophylaxis and growth promotion. Its solution requires the limitation and better control of these activities and the promotion of measures which reduce the need for them. The continued emergency and persistence of resistance despite attention being paid to it for many years (eg Report of Joint Committee on the use of Antibiotics in Animal Husbandary and Veterinary Medicine, Swann Committee. HMSO, 1969) indicates that current control systems are not working well and that new approaches are needed. Most of the bacteria affected are foodborne pathogens. For these reasons it seems perverse and unreasonable to restrict the input of the Agency primarily to the influence it can exert through the cross-membership of committees (para 4.29) and to exclude it from the role proposed by Professor James.

23 February 1998

Annex 1

E.coli O157 IS A NEW, EVOLVING, AND DANGEROUS PATHOGEN THAT PRESENTS A SEVERE CHALLENGE TO OUR FOOD SAFETY SYSTEMS

E.coli O157 differs from the other major causes of bacterial food poisoning in several important ways.

A dangerous pathogen

In a significant minority of cases it causes serious illness. The proportion of individuals responding to infection in this way is much greater among young children and the frail elderly. Mortality rates in these groups are often high. A considerable proportion of patients are left with permanent health problems including renal failure, brain damage, and raised blood pressure. The Advisory Committee on Dangerous Pathogens has recently recommended that it be reclassified from hazard group 2 into hazard group 3—to join organisms like *Salmonella typhi,* the cause of typhoid.

A severe challenge to food safety systems

The number of bacteria that can cause infection is very small. The organism has a degree of resistance to acid, a traditional food preservative, and may grow, albeit slowly, at refrigerator temperatures. Preliminary data suggests that it survives longer in the environment than harmless *E.coli.* Genetic evidence indicates that the organism may have the potential to evolve quickly. There is a consensus among scientists that it is new. No isolates predate the 1970's. Its true novelty contrasts with *Campylobacter* whose appearance at about the same time was due to the development of new improved isolation techniques rather than changes in the organism.

These factors combine to make *E.coli* O157 a good, and severe, "plough to plate" test for our food safety systems. Unlike *Salmonella* it does not cause disease in animals so there is no incentive for farmers to press for the development of methods to control it or for veterinarians to undertake routine surveillance for its presence. In any case, at this time we do not know how to eliminate it from animals. Control measures must be very broad ranging because they have to address the fact that the inadvertent ingestion of manure by people can happen by many different routes. *E.coli* O157 can be transmitted directly without an intermediate food vector (eg children visiting farms, shepherds at lambing) and via water, vegetables and apple juice as well as milk and milk products, and by meat and meat products. The possibility of transmission via foods contaminated during processing with organisms derived from symptom-free human carriers cannot be ruled out. The nature of the processes in slaughter houses and milking parlours make it inevitable that even in the best run operations from time to time meat and milk will be produced with low—but dangerous—levels of contamination. Its very low infective dose means that contaminated food—eg ready-to-eat cooked meat contaminated by direct contact with raw meat—can transmit infection without the need for further baterial multiplication.

A new and evolving organism

E.coli O157 is a particular variant of *E.coli* which has become dangerous to man because in the very recent past it acquired a portfolio of virulence genes from other bacteria. These genes have also transferred to other *E.coli* variants. They have the same ability to cause serious disease. These organisms have caused outbreaks of infection eg *E.coli* O111:H- in Australia. They are not detected by the bacteriological tests that have been developed for *E.coli* O157. It is uncertain whether such organisms are circulating in the UK at the present time. Their presence will only be revealed by special investigations, either done in the wake of an outbreak or as research projects. It is not possible to say whether these organisms will become commoner in the UK. Neither is it possible to make confident predictions about future trends in the rates of infection with *E.coli* O157. In particular it is not possible to say for how long the increases in incidence that have been seen nearly every year since its first appearance will continue. We cannot even offer a convincing explanation of the enormous differences in incidence between Scotland, England and Northern Ireland. It is clear, however, that incidence rates in Britain are the highest in the world.

Annex 2

PROGRESS TOWARDS IMPLEMENTATION OF THE PENNINGTON REPORT

Interim Report (Published 15 January 1997) Recommendations	*Action to Date (18 February, 1998)*
1. Research should be funded into the prevalence/incidence of *E.coli* O157 in Scottish cattle and other animals and the biology of its carriage.	1. 3 Research projects funded by SOAEFD.
2. **Surveillance** The Management Executive of SODoH and SCIEH should consider urgently the practicalities, costs and benefits of improvements to the arrangements for surveillance and data collection/analysis for pathogenic organisms and foodborne disease.	2. Implementation by SCIEH commissioned.
3. **Enforcement and Measures to Recognise and Minimise Public Health Risk** — changes to food safety legislation to reflect the importance of public health considerations and, in particular, to permit the introduction of elective licensing for food premises; — the physical separation, within premises, of raw and cooked meat products using separate counters, equipment and staff; — reviewing guidelines and Codes of Practice to help improve communications and to promote the recognition and assessment of risk and, again, public health considerations; — accelerating the implementation of HACCP for high risk premises.	3. For selective licensing and physical separation, see comments below on Final Report recommendations 14-16. Codes of Practice 9 (Classification of Food Premises) and 16 of the Food Safety Act reviewed and amended. £19 million additional funding made available in August 1997 for FYs 97–98, 98–99, 99–00 to UK local authorities to aid implementation of these changes and of accelerated HACCP. For HACCP, also see comments on Final Report recommendations 10-12, 14-16. Letters sent to LA's and HB's in 1997.
4. **The Handling and Control of Outbreaks of Foodborne Disease** Local authorities and health boards should ensure that there are in place joint local outbreak management plans setting out mechanisms and procedures for dealing with food poisoning outbreaks; The Scottish Office should review the guidelines relating to the investigation and control of food poisoning outbreaks and its internal arrangements for dealing with outbreaks when they occur.	4. Committee set up by SO to review these guidelines: final report will be produced after the FAI so that it can take account of the Sheriff's determination.

Final Report (Published 8 April 1997) Recommendations	*Action to Date (18 February, 1998)*
5. **Farms and Livestock** 1. There should be an education/awareness programme for farm workers. 2. This must be backed up by rigorous enforcement by the Meat Hygiene Service at abattoirs.	1. Scottish Agricultural College leaflets for farm workers and animals handlers published at end of '97. The NFU has organised meetings and roadshows for producers, hauliers and auctioneers on the presentation of clean livestock.

6.	**Slaughterhouses**		
	3. The Meat Hygience Service should urgently implement its scoring system for clean/dirty animals.	2–9	Eight-point action plan put in place in March 1997 by the then Government. Endorsed by Ministers. Details of subsequent progress given in Chapter 5 para 64 of the Memorandum submitted to the Committee by the Ministry of Agriculture, Fisheries and Food, the Department of Health, Scottish Office, Welsh Office and Northern Ireland Office. (C58)
	4. The Meat Hygiene Service must take forward urgently the identification and promotion of good practice in slaughterhouses.		
	5. Abbatoir workers should be trained in good hygiene practice.		
	6. The Hazard Analysis and Critical Control Point system should be enshrined in the legislation governing slaughterhouses and the transportation of carcasses and meat. Meanwhile, enforcers and the trade should ensure that HACCP principles are observed.		
	7. The Meat Hygiene Service should be given additional powers to enforce at the abattoir standards for the transportation of meat and carcasses between licensed and non-licensed premises.		
	8. Further consideration should be given of end-process treatments such as steam pasteurisation.		
	9. Efforts and resources of the Meat Hygiene Service should be targeted at higher risk premises—especially those abattoirs with Hygiene Assessment Scores of under 65.		
7.	**Meat Production Premises and Butchers' Shops**		
	10. HACCP (ie the approach and all 7 principles) should be adopted by all food businesses.	10–12	HACCP: See Chapter 4 para 11 and Chapter 5 para 68 of above Memorandum.
	11. The Government should seek to have HACCP enshrined in the review and consolidation of the vertical EU Directives.		
	12. The Government should seek to have all of the HACCP elements negotiated within the Horizontal Directive.		
	13. The Government should review the application of the Meat Products (Hygiene) Regulations 1994.	13	Under review by MAFF.
	14. Pending HACCP implementation, selective licensing arrangements for premisees not covered by the Meat Products (Hygiene) Regulations 1994 should be introduced by new regulations.	14–16	Government consulting on scheme which will: — operate on a GB basis covering all butchers' shops — require an annual application — be conditional on specific hygiene conditions, including a full Hazard Analysis and Critical Control Point (HACCP) — make it an offence for butchers to trade without a licence summer 1999.
	15-16. Details of licensing arrangements, including physical separation.		
8.	**Point of Consumption**		
	17. Food hygiene training should be provided wherever possible within the primary and secondary school curriculum.	17.	See Chapter 5 para 76 of above Memorandum: "UK Health Agriculture and Education Departments are working together on developing proposals to raise the profile and increase the coverage of food hygiene in schools".
	18. Guidance and education about food handling and hygiene should be included in all food and catering education and training courses.	18	Letters sent by SO to FE colleges.
	19. Steps should be taken by local authorities to encourage the adoption of HACCP principles in non-registered premises.	19	LACOTS guidance document in preparation.

20. Food handlers, in particular those working with vulnerable groups and/or in sensitive areas such as nursing homes and day-care centres, should be trained in food hygiene at least to the basic and preferably intermediate level.	Guidance and other documents in preparation by SO, DH.
9. **Enforcement**	
21. The Government should give a clear policy lead on the accelerated implementation of HACCP.	See Chapter 5 para 68 of above Memorandum.
22. The Government and local authorities should ensure that there are available suitable and adequate Environmental Health Officer skills and resources to address enforcement and education/awareness issues.	August 1997 funding package.
23. The Government should consider earmarking local authority funds for these purposes.	LA spend will be monitored.
24. Local authorities should designate an environmental health officer, to head food safety.	August 1997 funding package intended—in part—to enable all authorities to have a senior EHO in place to head food safety.
25. The Scottish Office Department of Health should take steps to improve the implementation and monitoring of the recommendations from the Advisory Committee on the Microbiological Safety of Food (ACMSF) and this Group on laboratory testing of stool specimens.	
26. A standard case definition and a standard protocol should be agreed for testing and defining clinical cases of infection with *E.coli* O157.	
27. On completion of investigations, it should be responsibility of the Consultant in Public Health Medicine (CPHM) to provide the Scottish Centre for Infection and Environmental Health (SCIEH) with a minimum data set (in the form of a standard proforma) for all general outbreaks of infectious disease, including food poisoning.	Proformas issued by SCIEH Nov 1997.
28. For large (or otherwise significant) outbreaks a full, written report should be completed and consideration given to its publication. Copies of written reports should go to SCIEH.	
29. There should be written, and published, a full report of the Central Scotland outbreak.	
10. **Research**	
30. Any further proposals for research related to *E.coli* O157 should be subject to normal processes for funding consideration and peer review, but with appropriate weight given to the threat the organism represents to public health.	

Examination of Witness

Professor T H Pennington, University of Aberdeen, examined.

Chairman

1396. My apologies for keeping you waiting. I believe you also have some very important things to say to this Committee. I do not need to tell you that you chaired the 1996 inquiry after the *E.coli* outbreak in Scotland. Your Pennington Report, a famous document in the annals of food safety, wide acclaim. Can you tell us whether you think the steps that have been taken to implement the recommendations have been satisfactory, appropriate and speedy enough?

(*Professor Pennington*) Broadly, yes, they are being taken on board in an appropriate manner. I have commented publicly about the long time it took to get a document produced about the selective licensing of butchers. I understand the reasons for that. It did take a long time. That is now out for consultation. It is somewhat different in form from that which we recommended but I am content with that because it is in fact going further than we recommended in terms of HACCP.

1397. It was remiss of me not to express our gratitude for your very detailed written

[**Chairman** *Cont*]

memorandum and that was one of the points I wanted to pick up in it and you have anticipated that, thank you. This is not intended to be critical but it is an interesting point for me. We have had evidence from the Royal College of Veterinary Surgeons and they said that your inquiry had not actually advanced our knowledge in any way over what we already knew and that was that they knew where the critical control points for meat hygiene were. Do you think that is a fair observation?

(*Professor Pennington*) In broad principle I would agree with that. The overwhelming majority of our recommendations were recommendations which had been made by others before us. Basically we are saying, get on with it now rather than have delays here or leave this until later and so on. We were basing our recommendations on sound principles which had already been enunciated by other people, yes.

1398. And ignored.

(*Professor Pennington*) And to a degree ignored or were being implemented more slowly than we thought was wise.

1399. It was a great shame that it was necessary to have this outbreak and your report at all.

(*Professor Pennington*) Indeed, yes.

Mr Mitchell

1400. It is two years since the *E.coli* outbreak in Scotland. Are we any closer to understanding why there is this kind of regional variation in outbreaks like that?

(*Professor Pennington*) No, we are not, I am afraid. Work is in progress, stimulated in part by the outbreak in Lanarkshire at the end of 1996, to look at some of the possible reasons why there might be significant regional variations such as whether this is due to regional variations in the carriage of the organisms in cattle. It will be a while before the results come in on that and those are very expensive studies.

1401. It does look odd that it affects Scotland five times more than the English and about 20 times more than the Irish.

(*Professor Pennington*) Yes; it is a great embarrassment to me coming from north of the border.

1402. I see in a report from The Herald you said at a conference in Scotland the other day that Scotland has the highest incidence of *E.coli* in the world and you describe it as a turd to tongue problem. A nice phrase; I wish I had thought of it myself. Does that mean that the turd is closer to the tongue in Scotland than in the rest of the world, or what?

(*Professor Pennington*) No, I am not a believer in the A.N. Wilson hypothesis that it is all down to Scottish pies and so on. There really is no evidence that we do have a dirtier food chain in Scotland than anywhere else. The evidence is just not there really on which to make a decent comment about that. My own belief is that a hypothesis worth looking at is that there may be higher levels of carriage in cattle. That is something we can establish. We have not established it yet; it is still a hypothesis, it is still an open question, but it is one worth looking at.

1403. Are there other regional variations in other aspects of this work?

(*Professor Pennington*) Yes; there are regional variations within Scotland which are marked. The east of Scotland has a much higher incidence of *E.coli* than the west and traditionally it has been the north east of Scotland but the south east is catching up fast. That does not follow the distribution of cattle in Scotland; there are many cattle in the south west. It is not a simple correlation between people and cattle coming together. It is another factor like the Northern Ireland and Scottish difference for which we cannot really advance any real explanation. We can perhaps chip away in the sense of saying that the Scottish reference laboratory for *E.coli* is located in the north east so therefore there may be more assiduous looking for *E.coli* in the north east and factors like that. It does not seem to be an urban problem anywhere in the world; *E.coli* infections do seem to have a rural association. We do not see as much in Glasgow and Edinburgh as we do in the country parts of Scotland. Apart from that, it is really a matter of pure speculation.

1404. In your memorandum you cast doubts on the accuracy of existing statistical data on food poisoning in Scotland. Do you have similar reservations about the data for the rest of the UK?

(*Professor Pennington*) Yes; yes.

1405. Why is that?

(*Professor Pennington*) There are general problems about the ascertainment of infections not just food poisoning but particularly from food poisoning. If we rely for example on notification—I have gone into this in detail in my memorandum—that depends on the eagerness of the doctor to notify and there is gross under-notification and when it comes to laboratory reports it really depends on the laboratory receiving the sample from the general practitioner and then making an isolation from the sample. We do not know what proportion of actual cases falls into that particular category. All the figures we have are under-estimates and there are also other factors coming into it like the enthusiasm of either general practitioners or laboratories in actually following up cases. I know that there are very substantial regional variations in that for example in Scotland some areas are very, very assiduous in looking at food poisoning, following it up, and others far less so.

1406. If we have these regional variations and we do not know why they are there, how can we formulate a satisfactory policy?

(*Professor Pennington*) We have to go on the data we have. We have no choice but to use the data however imperfect it is. Obviously one task for the Agency is to try to improve the surveillance in so far as it can. There are ways of doing that but they are not particularly easy. My expert group's report did refer to a previous report from the Advisory Committee on Microbial Safety of Food, for looking for *E.coli* for example, that this should be a universal activity. We know that has not yet happened.

1407. Do you think our current understanding of bacteriological food poisoning in the UK as comes from the statistics is actually out of line with the reality?

[Mr Mitchell *Cont*]

(*Professor Pennington*) It bears a resemblance to reality but there is a substantial number of cases of food poisoning, a minority.

1408. It is a bit like a car cover: it bends with the shape.

(*Professor Pennington*) We have the right shape; there is a substantial number of cases where we do not know what the cause is and of the ones where we do know the cause there is an enormous amount of uncertainty as to where the organism is actually coming from. With *Campylobacter*, which is the commonest cause of bacterial food poisoning, in more than 90 per cent of the cases we do not have the vaguest idea where those people are catching the organism from; whether it is from an animal or from the environment we do not know.

Chairman

1409. This is one of the things which has puzzled me particularly in our investigations on food safety, this issue of the Northern Ireland factor. It does seem very strange that we cannot actually pinpoint why Northern Ireland is a so much safer place to eat food than the rest of the kingdom. Do you have any hunch, guesses, you would like to share with the Committee about it?

(*Professor Pennington*) I was in Northern Ireland a week ago and they were telling me their firm belief, this was farmers and vets basically, that they have very good quality assurance systems in their cattle production, they have had a very aggressive agriculture department in the sense of following up animal health issues and public health issues over many, many years and they have their computerised traceability system. These are all factors which may, especially for the first two, play a role in the reduced number of cases compared to the rest of the UK. I doubt they play a very significant role and really at the end of the day it is impossible to say what the difference is except maybe it is down to luck.

1410. It is extraordinary that we have a huge Food Standards Agency to improve food safety and we do not know why it is safer in Northern Ireland.

(*Professor Pennington*) It is another of these embarrassing really quite hard pieces of data. There is no question that the Northern Irish are very good at finding food poisoning, they have a very good laboratory system there and their agriculture department has an international reputation in looking at diseases of animals. It is not because their ascertainment is in any way less effective than ours, it is at least as good as ours on this side of the water.

1411. You mentioned the question of *Campylobacter*. Perhaps we could look at that. I was very interested indeed and struck by what you said in your memorandum about the molecular fingerprinting techniques being developed and the establishment of a group of experts to do this by the Department of Health in 1992. You said, "As a member of this group I have observed rather slow progress. Its conclusions to date have to be regarded as interim". What is the nature of the problem with *Campylobacter*?

(*Professor Pennington*) The nature of the problem and why there is effort going in to try to develop typing systems is that the vast majority of infections are sporadic, they occur to individuals rather than groups and that makes it almost impossible to do any epidemiology to find out from whence they are coming. If we had a tracking system where we could type the organism and link the type of organism with, for example, chickens or milk that had had the tops pecked by magpies or something like that—one of the hypotheses is that birds pecking on the top of bottles of milk standing on the doorstep is a risk factor—if we could link bird *Campylobacters* with human cases, we might then be able to answer the question whether the birds were playing a significant role or not. Because we do not have a system which is really up to scratch to do that, that is holding up progress in understanding from whence all these *Campylobacters* are coming. Very large numbers are coming but from whence we do not know.

1412. Could more be done? What can we do to address this?

(*Professor Pennington*) Yes, more could be done. There is a conservatism among the microbiologists in developing new methods. There is certainly a tendency to argue as to which is the best method when none of them is very good. There has perhaps not been enough push made on that particular issue over the last two or three years to get this problem resolved. It is not a UK problem, it is a European problem, in fact there is a European initiative being looked at at the moment to try to get better typing systems, Europewide not just in the UK.

1413. If I recall the evidence that the PHLS gave us accurately, they have set up a reference laboratory.

(*Professor Pennington*) Yes, they have indeed. We set one up in Scotland a year or two ahead of them and we do talk to each other.

1414. I was very struck when we went to a broiler production unit recently and we were told about their enormous success in reducing *Salmonella* infection in the flock and a comparative lack of success in dealing with *Campylobacter* despite all their best efforts.

(*Professor Pennington*) Yes. We will not get to grips with the *Campylobacter* problem until we know more about its natural history. One of the things we do not know about *Campylobacter* in broilers is whether they are the ones which cause infections in people. It is assumed that there is a connection because *Campylobacters* are common broilers and they are a common cause of food poisoning, but the typing data to link the two types of *Campylobacter* is imperfect at the moment.

1415. How concerned should we be about this? As you have said, *Campylobacter* leads to sporadic occasions rather than serious outbreaks. Does that mean it is as big a problem as *Salmonella*?

(*Professor Pennington*) It is a bigger problem in numbers of cases; about 50,000 cases a year have a bacteriological diagnosis made. We do not know what the multiplier would be in terms of the actual number of cases but many people think a multiplier of ten would be a reasonable one. It is about half a million cases a year of *Campylobacter* in the UK. Most of the cases are self-limiting; the majority will not go to a doctor. There is a small proportion who

[**Chairman** *Cont*]

will get complications which will have hospital admission as a consequence. It is important because of its size rather than because of its severity.

Mr Hurst

1416. In your evidence you indicate that if we are to reduce the incidence of food poisoning action has to be taken at all points in the food chain. I will avoid any of these alliterations used by Mr Mitchell as to how we describe the food chain but we know in general terms what it is. We have heard evidence here which shows this really quite elaborate system in place in certain parts but others are rather more primitive. Where do you think the weaker points are in the food chain?

(*Professor Pennington*) It is really very difficult to answer that question precisely. It is possible to suggest improvements, for example for *E.coli* that we know and we have to say that red meat is potentially contaminated with *E.coli* albeit at low levels. You can never guarantee that raw red meat is not contaminated with *E.coli*. That problem could be potentially solved by treating carcases as they leave the abattoir by irradiation or perhaps by steam pasteurisation. That is a critical control point to which we could pay more attention and perhaps get rid of that problem very largely of allowing meat which is potentially contaminated to be sold as such.

1417. Will one of the weakest points always be in fact when the food product reaches home?

(*Professor Pennington*) Yes.

1418. In the sense that we can legislate, can we not, for abattoirs or farmers or food stores to follow all sorts of regulations? When it reaches the home we cannot legislate for the folk there to carry out similar processes.

(*Professor Pennington*) That is right, that is a particularly tricky issue in the sense that the consumer does bear a good deal of responsibility, for example if the meat is cooked *E.coli* is not a problem. If the cooking is adequate the organism is killed stone dead as all the other bacteriological causes of food poisoning are. On the other hand, it is wrong to say it is always the consumer's fault and that they should always regard all produce as potentially contaminated and they have to do all these things. There is an onus on people further up the food chain to make sure that problem is as small as possible, as well as leaving the final critical control point to the consumer, proper temperature control in the fridge, proper handling in the kitchen, cooking at the right temperature and so on.

1419. In some ways it is always quite easy to blame the commercial operator; it is always somebody else's fault further down. However, if many problems can be resolved, and they probably can, by a greater knowledge of hygiene and cooking methods in the home, should we not be concentrating more resources there because if the problem can be eliminated at that point in any event would that not resolve the problems further down?

(*Professor Pennington*) I agree that we should be putting resources into that. I have a personal scepticism about how successful large amounts of resource going into that end would be. We have heard already today about how one persuades the consumer to do things in an effective sort of way and the traditional brochure approach is not necessarily very successful. There may be better ways of doing it; I am not an expert in those. I would prefer to see an emphasis higher up the food chain as well as improving education. One of the things that the Northern Irish put to me was that they perhaps are more traditional in the way they cook their food and that may be a very important reason why they have less food poisoning in Northern Ireland; it is not entirely that because they have less of the weight of bugs in their animals as well. Maybe they are more traditional in the way they cook, maybe children there know how to cook. There is good evidence in this country that most children just go grazing, they do not go cooking. That is a big problem in terms of making sure that your food is properly cooked.

Mrs Organ

1420. We have heard from many witnesses, particularly the Chilled Food Association, that HACCP has been incredibly effective in bringing down the incidence of food contamination, albeit that some have been introducing HACCP for many years now. Do you have any scientific evidence to substantiate the claims that is actually the case, bearing in mind what you said earlier about feeling a little iffy about the statistical data on incidents of food poisoning in Scotland and other parts?

(*Professor Pennington*) One has to look at specific cases, for example a pasteurisation process which is properly controlled by HACCP will work well and will lead to a product which is safe and will lead to milk, for example, which is safe to drink. It depends entirely on the circumstance we are looking at. HACCP in general is just a philosophy, just an approach. It is the details, it is the ownership of it by the people who are applying it that is absolutely critical. A HACCP which is bureaucratic and that is not fully understood by the people who are doing it will not work. The HACCP which runs according to the principles which were laid down by Pillsbury and NASA with the horrible thought that diarrhoea in zero gravity would be a bad thing so you introduce it for that purpose, does obviously work. One has to look at specific circumstances.

1421. Do you have any evidence you could bring to us of cases? You talk about pasteurisation in milk where you can say there are certain elements, certain parts of the food chain, certain food manufacturing processes where you have evidence that the incidence of food contamination has been lowered as a result of the introduction of HACCP?

(*Professor Pennington*) You would be better talking to the large retailers and asking them, because they insist on HACCP from their producers, for actual data on the quality of their products. I am sure they would tell you. I do not want to put words in their mouths but I am sure they would tell you that their products are better than other products out there which are not subject to the same HACCP pressure which they put on.

[**Mrs Organ** *Cont*]

1422. Do you think that the Northern Irish consumer in the home is using HACCP more widely than we are on the mainland?

(*Professor Pennington*) If they are doing it they are doing it without knowing about it. I am sure that most of them have never heard of it but they may be in the sense that their traditional temperature control may be better and that may be a particularly good control point.

1423. You question why rates of UK bacterial food poisoning continue to escalate in the face of the abundance of control mechanisms in place. We talked about how that occurs. What control mechanisms are you referring to in that?

(*Professor Pennington*) I am looking at the whole range of activity; large sums of money go into enforcement for example, for environmental health officers—this is a question the Food Standards Agency could look at. We have talked about the monitoring of that side of activity. There are thousands of environmental health officers out there doing inspections. Is the way they are doing their inspection appropriate in terms of food safety? Are they doing the traditional type of inspection, looking for the cracked tiles on the wall rather than looking more at the HACCP end of things? It would be very instructive to look at that.

1424. When there is a failure of these control mechanisms, what do you think is the root cause of it?

(*Professor Pennington*) It usually boils down to some sort of human problem at the end of the day.

1425. Can this be tightened up by regulatory control or is there always going to be a human element in this?

(*Professor Pennington*) The advantage of the HACCP system is that it is owned by the people who are doing it, so it is really a management system, it is a philosophy that one will try and get down to the smallest business so that they know what they are doing, they understand what they are doing, it is properly documented and in a sense it is evidence based because they are focusing on what they know are the risks, what they know are the critical control points and they are monitoring that they are actually addressing those critical control points properly. If we could get that philosophy through, things would be much better.

Mr Todd

1426. My understanding of your report, and you confirmed it in the first answer you gave, was that we had a range of controls in place, the report did not advance our scientific knowledge substantially, it just simply showed we had not been doing those things we said we ought to do. Much of that does lie within the responsibility of environmental health officers and your report also bore that out as well. One of the steps which has been taken since then has been effectively to pass further responsibilities into the hands of environmental health officers whom implicitly you have criticised for not performing their existing tasks well. What basis do you have for believing that will change now and that these new responsibilities, together with their existing ones, will be implemented effectively?

(*Professor Pennington*) That is a difficult question to answer because for example the White Paper does not go into any great detail about how the monitoring of the enforcement area is going to be done. That will be extremely important. Professor James alluded to that. There is a widely held perception that the standards of enforcement vary enormously from local authority to local authority. Bringing up the standard is obviously going to be a very difficult task. I have no magic formula to offer on that one.

1427. The Government is just introducing its controls on butchers, the introduction of licensing and so on, which will be enforced by EHOs. Should we be concerned and suspicious that past performance would indicate this may not be performed particularly well and indeed some people have suggested that EHOs may occasionally be the source of infection themselves.

(*Professor Pennington*) I have heard that rumoured in terms of meat inspection.

1428. Indeed so.

(*Professor Pennington*) A slightly different area.

1429. A different area but nevertheless the potential remains there.

(*Professor Pennington*) I am not criticising environmental health officers generally. I would go along with the notion that there is variable performance of their duties across the country. I would want to bring up the standards to those of the best.

1430. Would you perhaps agree that the emphasis needs to be on improving the performance of what we already do as opposed to finding new ways of controlling the way in which we deliver food to customers and into people's mouths?

(*Professor Pennington*) The advantage of the HACCP approach is that it is an approach which is already established, it is already sanctioned, it has been going for many, many years and it is a more self-regulatory system in terms of control of hazards than the old-fashioned inspector coming in looking at the end point of the system. This is a system which looks right throughout the whole process in a particular business.

1431. You yourself have indicated some further areas of regulation for butchers' shops for example.

(*Professor Pennington*) Yes. The reason we recommended that was that we felt if HACCP was going to be done it would have to be done properly. We felt that it would take a number of years, particularly for the smaller businesses, to come on stream with HACCP. It is easy for a large firm, they have their own training staff, they have the resources to bring in HACCP and run it and they can set up HACCP teams which go and look for all the hazards and so on. The small butcher in the country town does not have those resources. He will probably buy in his HACCP as a package from a consultant. He may well be implementing a rather bureaucratic system which is not going to deliver. We were concerned that would happen. We would rather have

[Mr Todd *Cont*]
longer for that type of person to develop his own HACCP with the help of local environmental health people than go through some bureaucratic exercise by buying in a ready-made package.

1432. These EHOs may have a record of failure in this area already because HACCP has been around for a good long time.

(*Professor Pennington*) Obviously one of the jobs of the Agency will be to make sure that if there is a record of failure something will have to be done about it.

Ms Keeble

1433. You note that the White Paper's specific proposals for the control of *E.coli* would result in a situation as uncoordinated as at present. Can you just say what the current mechanisms are specifically for the control of *E.coli*? Can you say in relation to *E.coli* on the farm which does not actually damage the animals?

(*Professor Pennington*) At the moment *E.coli* is not an animal health problem. Really there are no controls at that end in terms of controlling *E.coli*. There is nothing that can be done anyway. If there were something I presume it would fall to MAFF to sort that out because it is purely a farm animal problem. There is a problem about zoonoses in the sense that traditionally salmonellosis causes animal health problems as well as human health problems so it has been easy to see a collaborative venture there. I had personal problems getting funding for research for *E.coli* 0157 in cattle because when one talked to the agriculture people they asked whether it was an animal health problem. We said no. Then it is not our problem, talk to the human health people. When we said we wanted to work on animals they said they did not fund research on animals. This is some years ago, I must admit.

1434. *Salmonella* does not make chickens ill does it, or does it?

(*Professor Pennington*) Yes.

1435. It does make chickens ill.

(*Professor Pennington*) Yes, it can do.

Chairman

1436. Not always.

(*Professor Pennington*) No, not always; that is right.

Ms Keeble

1437. Do you think that we should be aiming to have, say, *E.coli*–free meat in the way that supermarkets are aiming to have *Salmonella*-free chickens?

(*Professor Pennington*) I would like to see that as a long-term aim but it may have to be very long term because at the moment we have no knowledge of how one would actually establish cattle free of *E.coli*. There are no methods that we know of for us to do that. That is purely a research problem at the moment to see whether it is feasible. It may turn out not to be feasible. There may be, through vaccination and specific measures like that, ways of tackling the problem. Then one would have to ask the question: is it going to be worth spending money on that because clearly we would be attacking the animals with vaccines but not for any reason which was to do with the health of those particular animals. Who would pay for an animal vaccine which was purely there to protect people? There are all sorts of issues there which would come on stream later on. At the moment one does not know whether it is going to be practically feasible to have *E.coli* free animals. Research should be done bearing that in mind, having that as one of its aims.

1438. If it has always been in the animals, why has it suddenly become such a human health problem? Is it because it is only now getting into the food chain and if so why?

(*Professor Pennington*) It is a new bug which first appeared in the early 1980s.

1439. You suggest that the FSA should take a directing role in the control of *E.coli*. How do you think this would be done, if, as you say, one of the long-term aims should be to have *E.coli* free meat?

(*Professor Pennington*) What I was saying there was that *E.coli* 0157 is only a human health problem. Basically what the Food Standards Agency would do would be to commission research to see whether it would be possible to tackle this eradication in cattle as part of its remit. That is why I was saying it should take the lead role in looking at *E.coli* 0157 rather than leaving it to the agriculture people who really have rather little interest in *E.coli* as a problem for them. It is a problem for human health.

1440. This is one of the areas where possibly the relationship between the FSA and MAFF is critical because the FSA would have to be able to chase the issue back through MAFF to get it implemented.

(*Professor Pennington*) Yes.

1441. You talk about the very few organisms needed to cause harm in humans. Can you give an idea of the numbers as opposed to the numbers say in *Salmonella* and *Campylobacter*?

(*Professor Pennington*) For *E.coli* working back from infected burgers it has been estimated it may be as few as ten bacteria would be sufficient to establish an infection, 100 would be a safe sort of estimate, which is a very, very small number. For *Salmonella* people traditionally talk more in millions although there are some *Salmonellas* where the numbers can be much lower than that.

1442. Ten to a hundred compared to millions.

(*Professor Pennington*) Yes.

1443. And *Campylobacter*?

(*Professor Pennington*) I am not so certain about *Campylobacter*.

1444. One of the other issues which you have highlighted and I have certainly encountered as well is a difficulty in getting a medical diagnosis of *E.coli*. Is that because you need so few of the cells or is it that the doctors do not sometimes know what to look for?

(*Professor Pennington*) There are several problems. The doctor has to know what to look for and send a sample off as soon as the suspicion is raised. The complications from *E.coli*, the haemolytic uraemic syndrome where one gets the

[**Ms Keeble** *Cont*]

kidney problems, often occur quite late in the disease, many days after the initial illness. If one waits until the complications appear, the chance of making a bacteriological diagnosis by isolation of the bacterium are very, very poor in fact. The bacteria are usually away by then and it is possible to make diagnoses by looking for antibodies. That is always a little less satisfactory. Not all labs are equally good at finding the organism. Most labs nowadays would look for it; that would be a reasonable assumption in the UK but I do not have any data to back that up. It is an assumption one makes that most labs would be looking for it but not every lab, only a minority of labs would be using the best technology and there is about a tenfold difference between the best technology and the standard technology for isolating *E.coli* from patients.

1445. What happens in the medical world? This presumably would be absolutely critical to any control of it.

(*Professor Pennington*) Yes.

1446. What information goes out to the doctors and to the hospitals even to look for *E.coli*, because presumably the lab will only test for it if the doctor puts on that little pink slip, "Please look for ..."?

(*Professor Pennington*) In my laboratory all samples of bloody diarrhoea are looked at for *E.coli* whatever the chit says from the doctor because we found that the sort of information we get on a request form is often rather unhelpful.

1447. Does that apply to other labs as well?

(*Professor Pennington*) Yes.

1448. Regardless of what the doctor says on the bit of paper, they all look for *E.coli* routinely.

(*Professor Pennington*) No, that would not necessarily be the case.

1449. What percentage do look for it?

(*Professor Pennington*) I do not know. I do not think anybody knows.

1450. Do you in your lab then go back and tell the doctor, next time somebody comes in like this, will you please make sure that you think of *E.coli*, which is more serious than just a stomach upset?

(*Professor Pennington*) We have to keep good relations with the people who send us samples so we would use our judgement on that one. We would certainly try. We have an ongoing educational dialogue with the people who use the laboratory. The laboratory I work in is not a good example because traditionally we have always been very assiduous at looking for organisms like *E.coli* and the doctors who send the samples know that so they do not actually have to specify in any great detail what we should do. There are problems in other laboratories with other doctors in terms of the quality of the material the laboratory receives and some laboratories do not have the money to do all the tests they would like to do.

1451. Is the Department of Health, which is presumably responsible, doing anything or BMA or whoever to make sure that doctors are aware of it, given the incidence and the potential seriousness?

(*Professor Pennington*) The Advisory Committee on the Microbiological Safety of Foods has recommended that testing of diarrhoea for *E.coli* O157 should be universal. That was only a recommendation. It did not carry any resource with it which creates a problem. I do not know how well that recommendation got down into the woodwork as it were in terms of getting to every single bacteriologist. It would be fair to assume that most of them would know about that. There are also paediatricians who are particularly interested in the complications of *E.coli*. There is a national survey on the Haemolytic Uraemic Syndrome which in itself will raise the level of investigation on those cases. That started out about a year ago after having been in abeyance for a number of years.

1452. There has been lots of public concern about *Salmonella* and the others. The concern about *E.coli* has not been quite so high profile, yet I have certainly heard people talk about it as possibly the real coming food scare. Do you think that is accurate? How much of a risk do you think it is? How serious do you think it is that we actually put our minds to dealing with it?

(*Professor Pennington*) It is taken more seriously in Scotland because of our experience. We have had three very large outbreaks since 1994 which have got into the public consciousness as well as to the medical professionals and people who work in laboratories. That is only beginning to happen to the same degree south of the border. That is only a personal perception. That is not to say that people have not been banging the drum about it for a long time. The Advisory Committee on the Microbiological Safety of Foods put out an excellent report about four years ago on it and the PHLS has certainly been very active in its publicity about *E.coli* O157. Up until about a year ago, the number of cases was relatively small in England but last year there was a 68 per cent increase over the previous year, which showed two things. One is that certainly the increase is still continuing and it is a substantial increase. It also may mean that people now are much more aware of it, for example in laboratories, general practitioners, and are sending in more samples. It is a combination of the two. Awareness is now much greater than it was two or three years ago. The Lanarkshire outbreak had something to do with that. The publicity on the Lanarkshire outbreak was certainly much greater north of the border than down here.

Mr Marsden

1453. One of the most onerous responsibilities of the Food Standards Agency will be to oversee from farm to fork food safety policy and standards. It is such an enormous area. How do you think the FSA should actually prioritise any particular areas you think it should tackle first?

(*Professor Pennington*) It is absolutely essential. It will have to prioritise, it will have to take a reductionist approach on what it is doing, for example, certainly in bacterial food poisoning. *Salmonella* will be a much easier task to sort out than *Campylobacter* and *E.coli* because we know a lot about *Salmonella*, we have extremely good typing systems, other countries have in a sense managed pretty well to see off *Salmonella* as a food safety problem. There are lessons to be learned from that too. That would be something which would have to be really very close to the top of its agenda; a problem

[**Mr Marsden** *Cont*]

which is a big problem, an important problem because it is a big problem but one where we know a lot of the science already, we do not have to go out and commission a lot of work to find out the basic details. Other people have satisfactorily coped with the problem. The people in this country are coping with it too, so it is really a question of perhaps accelerating the progress that is being made in this country. With the other organisms I mentioned, *Campylobacter* and *E.coli*, we are in a much more difficult position in terms of reducing the food poisoning figures if that would be a kind of target which one would set because we really still do not know enough about those bugs to have good focused control measures in there. The priority there would be to commission very, very focused research on areas of ignorance with those two organisms.

1454. Is there not a danger that you are going to cherry pick the easier target first and hence leave arguably more dangerous organisms until later?

(*Professor Pennington*) No, you would be doing them simultaneously. It is not cherry picking. Medawar said that science is the art of the soluble and you actually pick the soluble problems first. You grind away at the other problems but people have actually been looking very assiduously at *Campylobacter* and at *E.coli* for a long time and they have been making relatively little progress, although there is a very large push on *E.coli* in the United States. They are looking at irradiation of carcases which I mentioned earlier and their experience might be very, very useful to us in deciding whether that is a route which is worth going down in the fairly near future. There is a lot of international effort as well. It would not be a question of the Food Standards Agency just relying on its own resources to do that, there is a lot of international work going on which it could use in its own prioritisation and its own control plans.

1455. Are there any priorities within the problem of *Campylobacter* and *E.coli* you think should be settled?

(*Professor Pennington*) The outstanding one, and I flagged it up in my memorandum for *Campylobacter*, is to find out where the strains come from. Without finding out where they come from, we might be focusing our attention on broiler chickens and putting a lot of money into sorting out chicken slaughterhouses when in fact that might only be a very small part of the problem. We need to know why Northern Ireland and Scotland have such big differences in *E.coli* because if we knew that we might be able to start thinking about controlling the organism at source. The problem with *E.coli* is that it is not just a food pathogen—we might be able to control it in red meat; it is becoming a vegetable problem in the United States where the only recommendation which can be given is "Wash and Pray"—it is also direct transmission, children visiting farms and so on. It is a broader problem than just a food problem in fact. Control at source is at the end of the day going to be the only satisfactory way of seeing that particular problem off.

1456. Any other areas you think should be prioritised? You talked about *Salmonella* as being the obvious one but are there any others?

(*Professor Pennington*) There are new problems coming along and that is one area which the Food Standards Agency will have to watch. *E.coli* for example, came from nowhere in the 1980s, hung around for a few years and then started to take off which it is now doing in many European countries over the last three and four years. It will have to be ready for other similar charges because I do not doubt that other similar charges will come along. Viruses are an unsolved problem which are even murkier than *Campylobacter* in terms of our scientific knowledge and our ability to control them but are probably more important than we think at the moment because our diagnostic tests are so poor. Certainly attention needs to be paid to that.

1457. You talk about any others which come along. Are there any others which are coming along at the moment which you know about which may not be a problem at the moment but you can foresee them in the future.

(*Professor Pennington*) There are funny parasites like cyclospora and cryptosporidium which lurk there as tough bugs which are resistant to chlorination of water and so on. They come out from time to time as problems, not generally causing very severe health problems but maybe getting commoner. The viruses are a bit of a black box at the moment. We know they are out there and we know that they cause problems, we know that they are under-diagnosed and we know that our control methods are primitive in the extreme.

Chairman

1458. It is natural to talk about the microbiological priorities in the Food Standards Agency but of course there are other issues it has to contend with too. There are chemical poisoning issues, there are antibiotic issues and the whole question of nutrition. In terms of prioritising all that whole vast array of work, how would you set the priority?

(*Professor Pennington*) I do not want to get into any arguments about nutrition but antibiotics—I am a microbiologist—are a very serious problem which is not being satisfactorily controlled at the moment and which already has major health implications in that we are running out of antibiotics to treat patients. The only reason we have antibiotic resistance is that we use antibiotics. If we did not use them to the same degree or we used some of them hardly at all, the problem would certainly lessen and certainly we would not be creating as many problems for ourselves. There is an issue to be addressed there about the control of use of antibiotics, not just in human health but in animal health, growth promotion and that means perhaps looking for alternatives to using antibiotics. Rather than saying you should not use them and being negative about it, trying to be in a sense positive. I know from the human health side that controlling the use of antibiotics is a very difficult task indeed and it is one which doctors basically have failed to do. We have very serious consequences as a result of that. I put that higher up than GMOs which are a problem which is coming along, a problem in terms of the consumer perception about those and trying to establish whether in fact they are safe, what sort of

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hazards those foods are creating. That is a problem which is with us but I would put antibiotics as something which have to be grappled with right now as a very high priority because it is a bad problem which is getting worse. GMOs are something which are just round the corner.

1459. For the record, your written evidence made great play of the exclusion of veterinary medicines from the Food Standards Agency and is of concern to you.

(*Professor Pennington*) Yes; yes.

1460. For the precise reasons which are set out.

(*Professor Pennington*) Yes.

1461. You did say in a very interesting article published in The Parliamentary Monitor with regard to GMOs, "This is a crucially important and pressing question". You seem to be reducing your claim for that now in your oral evidence to us.

(*Professor Pennington*) It is a very difficult issue. Because of the loop one has to go around in order to decide whether they are safe in a sense you have to use them and by using them you might then create the problem you are trying to protect yourself against. There is a sort of loop there which is going to be a very difficult one to break into in a rational sort of way. It does come back to consumer perception as well about novel things, particularly when the word genetics is mentioned. That is a particularly difficult area but for next week rather than this week.

1462. This Committee has so far heard no evidence I can think of which suggests that GMOs are a current human health problem.

(*Professor Pennington*) I am not aware of them actually having killed anybody.

1463. Do you think they might?

(*Professor Pennington*) Personally I am less worried about them than I am about the antibiotics as a hazard.

Ms Keeble

1464. I wanted to ask in particular about growth promoters. You mentioned there was some concern about that. Are you talking there purely about the artificial ones? We recently went on a visit and we heard about oil of oregano possibly being used which I understand would operate in the same way chemically although it is seen as being a natural product. Would you see that as being a problem as well?

(*Professor Pennington*) The crucial issue is: would the use of any of these products induce resistance to antibiotics if they were used therapeutically. I am not aware of that one being in that particular class. It may have a mode of action which is similar but I am not aware of it actually inducing or causing resistance. The problem with antibiotic resistances in bacteria is that they are always there, they are being thrown off by natural evolutionary processes but when you add antibiotics to the environment you then encourage them and they spread and after a while they become part of the normal flora and even when you take the antibiotics away the bugs do not go away necessarily. It is really a question of the selection pressure which is put on, the evolutionary pressure which is put on, by having these antibiotics there in large amounts in the environment.

1465. If the poultry industry is looking at a substitute for something which has clearly been ruled out and seems to be undesirable, should that not be checked before it is used in poultry production?

(*Professor Pennington*) Yes, it would have to go through the appropriate mechanisms to make sure. There have been problems with antibiotics which have been seemingly quite distant from the therapeutically used ones but at the end of the day they turn out to be similar enough to encourage resistance albeit they are not used themselves therapeutically. That is something which will obviously have to be checked out.

1466. At the same time as the microbiological safety and so on is being looked at, do you think that the FSA should be looking at raising consumer awareness and consumer confidence? What specific procedures do you think the FSA should introduce to deal with those? A bit like the questions I asked earlier.

(*Professor Pennington*) I am not an expert on the latter matter except it is very difficult. I suspect—it is a naive view probably—that the best way the FSA could engender consumer confidence would be by hitting some of the targets. Say it were setting itself a target for reduction in food poisoning and it succeeded in doing that, it might then win back consumer confidence that it was an effective body which was working in the public interest but that is a very difficult think to ask it to do because for a lot of them it does not know how to do that; nobody knows how to do that at the moment.

1467. Just look at food labelling and cooking instructions, which it is accepted should happen in a wide range of different areas and in most it does, including chickens, and you then say you do not get *Salmonella*. However, there are no warnings on beef that if it is not cooked properly you will get *E.coli*, which as you have identified is potentially a much bigger problem.

(*Professor Pennington*) The labelling issue is a very important one that the Agency would obviously have to address very early on in terms of the appropriate information being there in a readable form rather than in very, very small writing and not user-friendly. As a result there are also issues like traceability of foods as well. Part of the Swedish success with *Salmonella* is that the photograph of the farmer is on the chicken and people have confidence that it was produced by someone they could identify with and so on. It is also helpful if there is an actual outbreak of food poisoning. You know where the food came from, which has been a problem in one or two of our outbreaks where it was very difficult to track back. There are practical advantages as well as marketing advantages.

1468. Do you think there is also just a problem of sometimes doing labelling that will play to the public gallery whereas if you tell people they have to cook their fillet steak until it is well cooked it would make the beef on the bone ban look like a storm in a teacup, would it not?

[Ms Keeble *Cont*]

(*Professor Pennington*) Yes, there is an issue with *E.coli*, there was an issue with *Listeria* and there still is an issue with *Listeria* in runny cheeses and pâtés and so on. You have to give appropriate health warnings that not all foods are by definition going to be safe because some of these cheeses can only be made from non-pasteurised milk and non-pasteurised milk is inherently unsafe. There are labelling issues there which clearly have to be addressed so that the consumer knows what they are getting and can make the appropriate choice.

Mr Todd

1469. Bearing in mind that most of the people who will be recruited to the FSA and transferred to them will be MAFF/Department of Health officers, how confident are you that the FSA can do the job you expect of it?

(*Professor Pennington*) There has to be a culture change in some of them. My own personal experience, and that is about all I can talk about, is that I had extremely good relations with some extremely competent civil servants when my group was working. There were one or two issues when we got into debates with different government departments and I was very impressed at the ability of civil servants to enter into those debates and have interesting battles between each other. I would hope that would be one of the things which the Food Standards Agency would in a sense remove the need for, that there would not be departmental rivalries and so on. Professor James mentioned—maybe he did not use the words—that there is a sort of cultural secrecy and a self-defensive mode that "the Department" has always been right in the past and why should it change now. The setting up of the new Agency in itself will have a Hawthorne effect type of phenomenon where you are going into a new body so there will be a change to begin with anyway which will make it easier.

1470. Although, as I understand it, the individuals involved will continue actually to be employed by the departments themselves, even though they may be seconded and placed with the FSA.

(*Professor Pennington*) It would be nice if they were loyal to the Agency.

1471. It sounds a little as though you are hoping rather than expecting in this area.

(*Professor Pennington*) The proof of the pudding will be in the eating.

Mr Todd: That rather bears out what I have just said, does it not? A rhetorical question perhaps.

Chairman

1472. With the indulgence of my colleagues, may I pursue one or two other matters with you very briefly of a more philosophical nature. I was intrigued by your remarks in this article in The Parliamentary Monitor about the problem with science, "The trouble is that—almost by definition—the really difficult problems are the ones where the science is not there" and you apply that to the precautionary principle and say "Its application is one of the most difficult tasks in food safety work". I must say I rather felt for the Agency when I read these words. It has a hell of a battle on its hands to overcome these very real problems you identify, has it not?

(*Professor Pennington*) Yes; it comes down to public perception as well. The public sees science as somehow bringing in hard facts and very often the science can only bring one or two hard facts and then a whole heap of judgements and best guesses and perhaps a lot of argument behind the closed doors—Professor James mentioned the openness. There is a problem there about having these debates because science at the end of the day is about trying to achieve a consensus. When we have achieved the consensus we have solved that problem and we move on to another one. We may have to change it later when more data comes in but very often we have not got to the point of consensus in some of the issues we are discussing, like for example the *Campylobacter* typing issue where we cannot agree what the best methods are at the moment. We are still working on that, although we need the methods now. There are real problems there about trying to rely heavily on the science when in fact the science is often imperfect and sometimes wrong.

1473. Another issue is of great concern to me. You may not know this but you actually made me cheer in my car a few weeks ago when you were interviewed on *You and Yours*. You were talking about the dangers of a risk-averse society and you were asked by the presenter whether you agreed with some remarks by an independent journalist. You said, "Absolutely. There are expert committees who have the odd consumer representative on them. I think even they feel a bit beleaguered sometimes. I think sometimes experts can be carried away if they have a particular remit to protect the public from a particular risk and they will give advice on that sort of very, very limited basis perhaps without full cognizance of the fact that people, you know, are pretty well educated these days". On mature reflection, I hope you do, do you stand by those remarks?

(*Professor Pennington*) Yes; absolutely, yes. It is very unwise to underestimate the ability of consumers in general to understand some of the problems which scientists sometimes get hung up on.

1474. You stand by your conclusion that there is a middle ground here which we should be aiming for, not the nanny state, not complete unregulated sort of mayhem but somewhere in the middle.

(*Professor Pennington*) Yes. We come back to the labelling issue there for example. With some foods there is definitely a risk if one eats those foods, particularly to certain people. If they are adequately labelled one can protect those high risk people from that particular health hazard and with education as well but still allow fancy cheeses to be made and sold.

1475. In conclusion, may I share one great fear I have with you and this is a fear which was expressed by Mr Rooker last week at a conference he addressed. He said that he was worried that FSA was going to be like the Child Support Agency. Everyone agreed it was a good thing and therefore it was not going to be scrutinised as it might have been before it was set up and it would be established and not work as it was hoped it would work. This is a fear I have

[**Chairman** *Cont*]

myself. We are always saying it is a frightfully good thing because we think it is. Do you think there are any particular dangers in the FSA which we are not focusing enough on in the debate at present which we should, in the spirit of Mr Rooker's very sensible and welcome remarks, offer?

(*Professor Pennington*) All it does is set out a framework. Whether it works or not will depend on the people who work in it. A lot will depend on the commissioners, a lot will depend on the civil servants who are in it and one thing which could blow it away almost before it started is if we have another food scare of magnificent proportions, say halfway through the second year of its establishment. Clearly the Agency will have to work out how it is going to handle that because it is almost inevitable that such a thing will happen.

1476. From what you have been saying about the fast rate at which bugs breed these days that is going to be a matter of luck as much as anything else.

(*Professor Pennington*) Yes. These bugs are out there evolving about a million times faster than we are, setting new challenges all the time. It does not have a set of tasks to do, it has something which will go on for the rest of time in a sense. Food will always be challenged by new bugs and other things like GMOs are coming on; there are lots of other things which are developing very rapidly. It is going to have to be a very dynamic organisation.

1477. It would be a very serious matter if it is blown out of the water in its second year of existence by an accident.

(*Professor Pennington*) Yes; it has to have a contingency plan.

1478. Are there any other points you think we should have asked you about in this session?

(*Professor Pennington*) No, I think you have covered many of the points which I had in my memorandum.

Chairman: Thank you very much indeed. We are exceptionally grateful to you.

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THURSDAY 26 MARCH 1998

Members present:

Mr Peter Luff, in the Chair

Mr Tim Collins	Ms Sally Keeble
Mr Andrew George	Mr Paul Marsden
Mr John Hayes	Mr Austin Mitchell
Ms Fiona Jones	Mrs Diana Organ

The Rt Hon. Dr John Cunningham, A Member of the House, Minister for Agriculture, Fisheries and Food, examined.

Chairman

1479. Dr Cunningham, welcome for the third time to the Agriculture Select Committee. I do not think there can be a minister or secretary of state who takes his duty as accountable to the Select Committee more seriously than you and we are very grateful indeed to you for the compliment you pay this Committee by coming before us again. We were in Washington last week, as I think you may know, looking at the Food and Drug Administration, the USDA and talking to politicians. I was told there that anyone who loves sausages and has a respect for the law should not look too carefully at how either is made. This afternoon we want to do precisely that, both those things, and we are grateful to you for your assistance in doing that. May I remind you of some words that you offered to the *Financial Times* earlier this month, when you said: “The Ministry of Agriculture is going to change quite fundamentally. I was sent there to change the Ministry, to redirect it, to change its culture and to split off those responsibilities for food safety and food hygiene.” Clearly you recognise, as I think most of us do, that there has been a historical problem with MAFF on these issues going back many years. In your opinion, how far has this been due to MAFF’s failure to set proper food safety and consumer protection standards? Has the culture within the Ministry meant that food safety issues have been downplayed or compromised?

(*Dr Cunningham*) Chairman, first of all, thank you for your kind words of welcome. It is a pleasure to be here to exchange views with you and your Committee Members again and I look forward to your report, which I hope and expect will play an important part in this on-going dialogue and the consultation which is all part of the process of establishing a Food Standards Agency in this country. There were problems with MAFF which we clearly identified and some of those resulted from lack of political direction, I believe, in the past. Some of them were concerned—and specifically I come to the point you have raised—with the fact that historically the Ministry had been responsible, on the one hand, for promoting the production of food and at the same time been responsible for issues of food safety, food hygiene and food standards. The purpose of creating a Food Standards Agency is to divide those responsibilities, to make a clear separation between, on the one hand, responsibility for food production, which will remain with the Ministry, and, on the other, for a powerful, independent Food Standards Agency which will have responsibility for those other very important matters. That was a flagship Manifesto commitment of Labour before the last election and it has fallen to me and my colleagues in the Ministry to make those changes. As you know, we published a White Paper earlier this year. At my last check I think we had received almost one thousand responses to that White Paper, which, of course, we have to analyse. It is our intention to go on to produce a draft Bill, on which there will be further consultation, and separately to have a specific focused consultation on how the Food Standards Agency would be financed. As for changing the culture of the Ministry, rightly or wrongly the Ministry had developed a reputation for being closed, inward-looking, secretive and unco-operative and not particularly user- or consumer-friendly. We have set about changing that culture. We are much more open now; we have one of the most popular used websites in the country; we have adopted the principle that we should, as of norm, publish everything that comes our way by way of scientific advice; we have appointed consumer or lay representatives to all our advisory committees; we have put the health and well-being of consumers and the environment at the top of our agenda, and I am delighted to be able to tell you and your Committee that the civil servants in MAFF have responded very positively to all these changes, many of which, of course, could ultimately affect their careers in some way or another. I know that the very extensive and detailed memorandum that we produced for your Committee—I think probably one of the most comprehensive memoranda ever produced for a House of Commons Select Committee—has been welcomed by you. I have read the comments you made about that when Richard Carden, Geoffrey Podger and Dr Rubery came to give evidence on that. If there is anything I can add to that in the course of this afternoon, of course I shall do my best to do so.

1480. You are right to draw attention, Minister, to the memorandum by your Department. We thanked your officials for it at the time when we saw them in November and I repeat those thanks now. It was a first-rate memorandum which we greatly appreciated. Before I pass on to my next question could I ask about the draft Bill which you mentioned. Is there any indication of timescale for that draft Bill?

(*Dr Cunningham*) As soon as possible. I did say just a few moments ago, as with the James Report there has been a huge response to the White Paper, which

[**Chairman** *Cont*]

is a clear indication of the importance and the interest that is being shown in all these issues, and we shall have to analyse those responses and we shall produce a draft Bill just as soon as it is possible to do so. I cannot give you a specific date for that, I am afraid, but we do not want to waste any time because it is our hope, of course, that the legislation can be included in the Government's next legislative programme.

1481. You will not be giving drafting instructions to the draftsmen yet then?

(*Dr Cunningham*) No. I say no. I think there may have been some preliminary discussions between my officials and Parliamentary draftsmen but I do not think the formal briefing in detail has been given.

1482. Going back to the culture of the Department and the priority attached to food safety, historically, of course meat and dairy hygiene has been a MAFF responsibility and that has been pursued through its executive agencies, but we heard last week from Professor Pennington, who took the view that the Department of Agriculture in Northern Ireland had taken a very aggressive public health policy which he thought could have made a contribution to the matter which still puzzles me greatly, why it is that food poisoning in Northern Ireland is so much lower than it is in the rest of the United Kingdom. If he thinks that DANI has done a much better job than MAFF, that reflects rather badly on the priority your Department historically has attached to food safety policy, does it not?

(*Dr Cunningham*) Yes, but no-one can really answer the question you just posed, why are incidences of food poisoning higher in some areas of the United Kingdom and lower in others. There is no answer that I am aware of to that question, and I may say on the evidence that we have, of course, there is very considerable under-reporting of the incidence of food poisoning in the United Kingdom as a whole and we are looking at how the data and statistics might be improved.

Chairman: I am sure that will be an important matter for the Agency once it is established. Mr Collins.

Mr Collins

1483. First of all, Minister, may I apologise for the fact that an invitation to accompany some schoolchildren from my constituency to No. 10 means I will be leaving before the conclusion of your evidence, but picking up on your last point, which concerns the fact that nobody really knows some of the facts relating to food safety, do you think there is a case for there to be more research in that area, given that one of the things that has struck this Committee as we have looked at these matters is the extent to which there are continuing scientific uncertainties? Do you think there is a case for refocusing or maybe even expanding some of MAFF's scientific research programmes?

(*Dr Cunningham*) We have a very extensive research programme, Tim. In round numbers the Ministry spends about £130 million on research, clearly not all of it in the areas to which you have referred, but we do review the content and direction of that research programme very regularly. Indeed, my ministerial colleagues and I have just had an extensive series of meetings and discussions about the research programme in the last couple of months or so and we do, where problems are identified, re-allocate resources. We have done that, for example, in respect of advice from the Advisory Committee on the Microbiological Safety of Food in respect of food-borne viral infections and in respect of microbial antibiotic resistance, to name two of the most important areas.

1484. Following on from that, Professor Pennington told us that he thought that policy relating to emergent threats to food safety should be, in his words, "preventative and proactive". In particular he was concerned about what he described as the under-researched subject of viruses and he said that "our control methods in this area are primitive in the extreme". Is that a judgement which you and your officials share, and if so, is there anything you can do about it?

(*Dr Cunningham*) I think there has been concern about viruses but I must say not just viruses. It is very difficult to deal with coliforms, enteroviruses and pathogenic micro-organisms in the food chain in general, but the Advisory Committee again set up a working group on food-borne viral infections. That work is still going on and we await with interest its report and any recommendations.

1485. But your predisposition would be to adapt the research programmes in the light of that sort of advice if it is incorrect?

(*Dr Cunningham*) If we were given clear evidence and recommendations that we needed to put in a greater effort in a particular area which was perceived to be a growing threat to the health and well-being of the public, we would do that without any hesitation.

Ms Keeble

1486. In relation to the advisory committees, MAFF's written evidence talks about the involvement there of consumers and also issues about public interest. Could you say what the current rules are in relation to the declaration of interests for members of these committees, and in particular the holding of paid consultancies by committee members from the agricultural supply and food processing industries?

(*Dr Cunningham*) First of all, let me say that we always seek to base our assessments of food safety issues on the best available scientific advice provided by experts invited in their own right because of their expertise and because they bring to officials and ministers independent advice. Sometimes those experts come from within the industry, sometimes they come from the groves of academe. In both cases they may actually have financial arrangements, consultancies but they are required to declare them under the rules under which MAFF operates and, if necessary, if the person chairing the appropriate committee deems it necessary they are asked to leave when any particular agenda item which might produce a conflict of interest arises. So the rules are there; they are enforced. Anyone appointed or being

[**Ms Keeble** *Cont*]
involved is required to give a written statement of any financial interests they may have and this is known to the chair.

1487. Do you know how many members on the Food Advisory Committee and the Advisory Committee on Pesticides actually have paid consultancies?

(*Dr Cunningham*) No, I do not know. I can let you know but I do not have that information in my head.

1488. I recall when you came previously there was a lot of discussion about getting more consumer involvement on these committees and in MAFF as well. I wonder if you could tell me what steps have been taken so far to improve representation and input of consumer and public interest groups on the advisory committees?

(*Dr Cunningham*) It is our policy now, Sally, to have at least one lay or consumer person on every advisory committee of the Ministry, and, incidentally, to encourage them, wherever possible and appropriate, to publish more about the work they are doing.

1489. Can you say how they are selected or appointed and what sort of base they are drawn from, because one of the things that we have noticed is that there is not a very large number of, for example, consumer groups which are entirely devoted to food issues here? We saw a few in the States but we have not seen very many here.

(*Dr Cunningham*) My ministerial colleagues and I receive recommendations and maybe we are given a short-list of people to select an appropriate person from and that is the way we do it, and, of course, all this is done according to the Nolan rules. One of the problems we have—and this is an historic problem in MAFF—is finding women to serve on many of these committees. Women are hopelessly under-represented as a general rule on these committees. Let me say on most of the committees; it is not true of all of them.

1490. I appreciate the fact that they are appointed under the Nolan rules but in terms of getting the base from which they are selected, what is your view about the nominations that come from such as consumer interest groups perhaps rather than from professional bodies or academia or market research organisations and so on?

(*Dr Cunningham*) I am pleased to say that we have excellent relationships with the consumer organisations. We meet them regularly, individually and collectively. We ask them to nominate people, where appropriate, and we try to draw our people, our advisers, from the widest possible pool of those available and willing to serve. One of the problems with asking people to serve on these committees, of course, is that they often have to spend a lot of time, to be involved in very serious work programmes and they are doing it for nothing in their spare time in most cases. So that is a restriction and, of course, travelling to London is a restriction for many people, too, but we have examined the available pool of people and how we do recruit people and we have recently taken the decision to advertise. The Ministry will advertise for people willing to serve and do such work because we want to widen and strengthen the number of people available to us as effectively as we can.

1491. And does that include trying to recruit more women?

(*Dr Cunningham*) It certainly does.

1492. Could you say what new mechanisms and safeguards the Ministry has introduced into its policy-making over the last year to restore consumer confidence in food safety regulation?

(*Dr Cunningham*) Of course, principally it is our decision to establish the Food Standards Agency, which is aimed at not only ending this conflict in the Ministry of producer and watchdog and rebuilding public confidence in our food, which is absolutely fundamentally essential, but secondly, it is to open up the Ministry, as I have said, and to publish as much information as possible. For example, we began publishing for the first time the results of the analyses of branded foods. The work was done by the Ministry; it was paid for by the taxpayer, but the results have never been published, so that people did not know, consumers did not know, which seems to us rather bizarre. It was one of the first recommendations of Jeff Rooker, my Minister of State, that we should do so. We have begun to publish the hygiene assessment scores of all the abattoirs and meat-handling plants in the country. We are the only Government in Europe which does that. We have, as I have said, encouraged our advisory committees, wherever possible, to publish reports on their work. We publish when we get it the advice of the Spongiform Encephalopathy Advisory Committee, for example. We published and accepted all the recommendations of the report of Professor Pennington and in that way we are seeking to deal responsibly and carefully with the issues. Nevertheless, our general disposition, as I have said, is to make available to the public all the advice and information which is available to ministers, and I think as a general principle that is the right way forward.

1493. I wondered if you could say a bit more about how you see the relationship between consumers and the Food Standards Agency being structured? We have heard quite a lot from different people who have come here to give evidence that it should be, for example, by public survey, by all kinds of different methods. In particular how you see the consumer representation in the Agency working? Again there is an issue about how people are selected who can put a consumer viewpoint, who are completely independent or perceived by the public to be independent of the food industry?

(*Dr Cunningham*) First of all, let me say a general word about the intentions for the Agency itself. It will be run by a group of commissioners who will be appointed for their individual independence and expertise. They are not intended to be representatives of producers or consumers. They will be there on merit in their own right for the quality of the contribution they are able to make. Secondly, it is very important that we have the best possible person as chief executive of this organisation. The Agency itself will develop its own communications strategy. We do not want to dictate in advance exactly how it

[**Ms Keeble** *Cont*]

should do everything, but it will have its own budget and develop its own communications strategy. It will be able to do surveys of consumer thinking and attitudes, of course, and perhaps most critical of all, the Agency will have the ability, the right, to publish its advice to ministers, so there will be no hiding place for ministers either in respect of what the Agency believes to be necessary or how it believes problems should be dealt with. That is a very powerful tool for this Agency to have.

1494. Finally, how do you think the Agency and, indeed, MAFF should be measuring consumer confidence and dealing with consumer issues, because we have seen that when there are food scares public opinion swings very wildly. We have seen today there is new information come out that might or might not be true about what is happening to cattle carcases. Things like this can seriously affect public opinion and hence public confidence. How do you think the Food Standards Agency should deal with that?

(*Dr Cunningham*) Of course, if people, either through carelessness or through irresponsibility, cause scares, alarm the public, it is very difficult for any agency, ministry, parliament or government to deal with that. What we have to do is ensure that always the best possible independent scientific advice is available in respect of these matters and to make sure it is communicated to the public in a way they can understand and assimilate. That is also very important, not just that the information is available but available in a way, to quote Mahatma Gandhi, "We must speak to people in language they can understand," otherwise we fail in the communication process. But as for the events of this morning that you have mentioned, let me make this clear. We in MAFF have no evidence at all from anyone in respect of more and more animals being illegally disposed of on farms. Our vets and inspectors and staff are on the farms day in day out, week in week out, around the country, and simply they do not see any evidence of this and, what is more, the people making the allegations have produced no evidence. Jeff Rooker met one of these people last month, who said he had evidence but has not produced any evidence. There was a television programme last month, too, which purported to show activities which were clearly illegal. We have asked for the evidence in that case but it has not been produced to us. I had a BBC reporter this morning repeating these allegations. The duty of these people really, if they believe widespread illegality is taking place, is to report it to the Ministry of Agriculture and then we will take appropriate and immediate action to deal with it, but no-one has produced any evidence.

Chairman: I am very grateful for that important statement but we are in danger of wandering away from our main brief. I welcome it. I entirely agree with what you are saying and thank you for saying it. Diana Organ.

Mrs Organ

1495. My apologies. Like Mr Collins, I too have constituents who wish to see me. It has been made clear that "the Government's approach is to seek to reduce the potential for contamination at all stages of the food chain." It has been clearly made by your Department and yourself, but in practical terms we have to recognise that certain stages of the food chain are more limited than others and the scope for improvement, therefore, may be more limited at certain stages. Could you expand a little on the statement that I have just made there? At what stages in the United Kingdom food chain do you believe that improving the standards of food hygiene are most problematic and why?

(*Dr Cunningham*) You are inviting me to write an essay. I shall try to be brief. Of course, we must try to focus our attention and our efforts on the critical areas. That is, broadly speaking, what we must do and that is what the Government is committed to do. That is why, for example, we are already consulting butchers about licensing and about the introduction of HACCP in butcher's shops (Hazard Analysis and Critical Control Points) because that is a critical area. It is for the same reasons that we are driving up the hygiene performance of abattoirs and meat-handling plants and imposing more effective controls there, a much more rigorous regime, and, as I have said, publishing the hygiene performances of those plants. It is also important that we should make clear to the public that they themselves have a critical role to play. After all, it is probably true that the vast majority of food poisoning cases arise in the home. So at every level in this chain these organisms that you are talking of threaten the public's well-being. So from the Ministry's point of view in terms of focusing on the public's role in this, we spend a great deal of our time and money at food exhibitions and food fairs and in the run-up to important festivals where we know people are buying extra food or different food, such as Christmas, to focus an information message towards the general public to try and ensure that they take the utmost care in the home.

1496. Would you, therefore, like to see a particular role of the new Food Standards Agency to have an educative role for the general public about general measures of hygiene?

(*Dr Cunningham*) Yes, and it will have such a role.

1497. Moving on to HACCP, which obviously is a mechanism which is being deployed really rather successfully at all stages of the United Kingdom food chain, some witnesses, such as the British Meat Manufacturers' Association, have commented that the integrity of the HACCP system in the United Kingdom is threatened by the lack of its implementation at farm level. What steps, if any, is MAFF taking or about to take to encourage the implementation of the HACCP system at the farm level? They believe the integrity is threatened because HACCP is not being deployed at the farm level.

(*Dr Cunningham*) I must say I have not seen that evidence or even that comment myself, but let me say what I said a few moments ago. We decided that we must focus our attention first where we believe the greatest risks are and that is why we are focusing first on butcher's shops. We cannot make this fundamental change universally all at once so we must go for what we believe the prime targets are first and that is, in our judgement, retail butchers. We are carrying out an evaluation of approaches for the implementation of HACCP in the wider food industry, including, for example, HACCP training

[**Mrs Organ** *Cont*]

for businesses, HACCP training for environmental health officers, a register of accredited consultants to assist with HACCP, a range of literature to improve HACCP awareness and understanding by businesses, and some industrial sectors are already responding on a voluntary basis. The industry guide to good hygiene practice, for example, is a retail guide. This was developed under the Food Hygiene Directive by the industries concerned and approved by the Government. It is largely based on HACCP. Assured Safe Catering is a guide for the application of HACCP to catering produced by the Government as long ago as 1993. There are forward programmes in the red meat and poultry meat industries. These were developed by the Government and industry groups working together last year and they contain a voluntary agreement to apply HACCP in abattoirs and slaughterhouses, so I am a bit puzzled by this comment that you have just made. I do not understand it, because the red meat and the poultry meat industry on a voluntary basis worked with our officials last year to begin the introduction of HACCP, so I think your comment is rather odd in the circumstances.

1498. Except that if we are going to look at the whole of the food chain it does seem odd that we only pick certain sections of it to deploy a HACCP system, and since we start with the food on the farm, would it not be advisable to look at implementing HACCP at the farm level at the very beginning of the food chain?

(*Dr Cunningham*) Ideally, as I have said, one wants to see the most universal application which is practicable, but since we are starting from scratch here we must target what we believe to be the highest risk, most important areas first and that is what we are doing.

1499. One of those highest risk areas must obviously be slaughterhouses and you have said that the implementation of HACCP should be accelerated for slaughterhouses but kept still on a voluntary basis. Surely it should be made compulsory and rigorously enforced if we are going to raise standards there?

(*Dr Cunningham*) Let us remind ourselves there are other food regulations and there is other food law which applies, of course, so it is not simply HACCP that we are basing our approach on. I have emphasised that we have targeted particularly slaughterhouses and meat-handling plants in publishing their hygiene assessment scores, in introducing a much tougher regime of inspection and enforcement, and, in addition to that, we now have this voluntary approach to HACCP. Because the industry came forward very quickly following the election on this I said that we should let it operate on a voluntary basis, assess the success of that and then consider whether we needed to legislate to make it compulsory or not. So making it compulsory is not ruled out but the quickest way to get the thing off the ground and going was to have a voluntary agreement to proceed and so that is what we did. Let me say, where we find serious transgressions we simply revoke the licences of establishments and close them down and we have done that on more than one occasion, and believe me, we will not hesitate to do it again if we judge that to be necessary in the public interest.

1500. But if the industry has been so forthcoming and has taken on the voluntary approach so readily, surely the next stage to raise standards is to have a compulsory HACCP implementation?

(*Dr Cunningham*) In my own personal judgement, self-regulation does not have a great record, whether it is in the meat industry or in the City of London, but I had better say that is a personal aside. So we will keep it under close review. We will assess the success or otherwise. The meat industry is, frankly, in the United Kingdom typical of any industrial sector. Its best performers are excellent and have some of the highest standards to be seen anywhere in the world, but like other industrial sectors, it has a rather long, poorly performing tail, and it is that problem that we have to focus on to bring the poorest performers up to the level of performance and competence of the very best, and now, through the publication of hygiene assessment scores, that is a score showing the hygiene performance of the plant itself. By making this public, wholesalers, retailers, supermarkets and others can see how plants they are dealing with, or may be thinking of dealing with, are performing in terms of hygiene and that is an important incentive to the plant to improve its performance, otherwise it may lose business.

Mr Mitchell

1501. I want to revert to consumer representation because we tend to go for institutionalised consumer representation, somebody from the CA or whatever. I wonder if the real requirement—you said you are looking for more women, which is perhaps a sexist view in the sense that women do the shopping—

(*Dr Cunningham*) No, forgive me, not just in respect of consumer matters. What I said and what I repeat—let us get this straight on the record—is that in general on our advisory committees as a whole women, who are 50 per cent. of the population, are badly under-represented. It is nothing to do with consumerism, it is to do with everything that we do.

1502. I accept that, but you made the point in the context of consumer representation.

(*Dr Cunningham*) All this is being written down and used in evidence. We have to make sure it is right.

1503. In the context of consumer representation, which is unpaid. Is not the real requirement for consumer representation that you want people who are just nuisances, trouble-makers, stirrers, who are going to speak out and be aggressive on the issue?

(*Dr Cunningham*) A few Austin Mitchell clones would come in very handy.

1504. Jeff Rooker clones are more important, but yes, that is the kind of persistence you want?

(*Dr Cunningham*) What we want is people with enquiring minds and the disposition to ask the important and sometimes the difficult questions. You are absolutely right about that, Austin, and that is what we are seeking to do, as I have said, to open up all these committees to lay or consumer enquiry as a right from membership of the committee.

Chairman

1505. You have made progress in appointing consumers to committees. Are you satisfied they are the kind of trouble-makers Mr Mitchell wants?

(*Dr Cunningham*) Some of them have been very recently appointed. I do not think they all necessarily have to be labelled as trouble-makers, but they know they are there in the public interest and they are appointed on that basis and we are finding that people are very willing to take up the positions. As I said in an earlier response, we want to broaden the pool of people whom we can draw on.

1506. They have to be very confident people, do they not, to cope with the experts whose arguments they confront?

(*Dr Cunningham*) Yes, they do, and on the whole they are doing a very good job for us.

Ms Keeble

1507. There is a difference between a consumer group that represents consumer interests generally and people who are completely dedicated to food safety. Are you satisfied that there are in this country the organisations that are purely devoted to food safety who can drive forward the public interest from the consumer's perspective in the Food Standards Agency? The people that Austin called the determined trouble-makers I call a strong and independent food consumer movement. Are you actually satisfied that you have got that?

(*Dr Cunningham*) I think the United Kingdom is fortunate in having one of the best, most competent and most wide-ranging consumer movements anywhere in the world and they are highly respected, not only here but in Europe. They are often leaders in their fields. I am using "consumerism" rather loosely here. You are specifically talking about food but when we think of a whole range of organisations and pressure groups, some statutory, some non-statutory, there is a huge body of knowledge and competence and experience out there which we are very fortunate, as a Government, to be able to draw on. I am absolutely clear in my own mind that establishing the Food Standards Agency is the right thing to do and we must make careful judgements about the people we appoint to it, of course, because it has to be dispassionate, objective, independent and act on the best available scientific advice, but I am quite sure that we shall get excellent people to take up the role.

Chairman

1508. I wish I could share your confidence, Minister. Maybe it is our fault as a Committee but we have had very little evidence from the consumer movement in this food safety inquiry, disappointingly little, and I think it reflects the concern I heard Mr Rooker express, that this Agency is not being sufficiently scrutinised by public debate as to the detailed role but we have not had that consumer interest in this inquiry. Perhaps you can tell us who it is we should be talking to?

(*Dr Cunningham*) I am not sure that I could agree with that last comment because you said it is not being scrutinised sufficiently. I pointed out that we have had almost one thousand responses to the White Paper.

1509. How many of them disagree with the principles of the Agency?

(*Dr Cunningham*) I have to confess, throwing myself on the mercy of the Committee, I have not read them all yet.

1510. I suspect it is rather a one-sided debate.

(*Dr Cunningham*) But this is a phenomenal response to a Government White Paper on these important issues and we shall publish an analysis of those responses, of course, but I am greatly encouraged personally by the huge amount of interest which is being shown in these proposals, and it is important. You are absolutely right to say it is very important because we want, through this open dialogue in this long period of consultation, to try to establish the broadest possible consensus for what goes into what will be vitally important legislation, not just for consumers but for the food industry too, of course.

Chairman: We too have been deluged by representations to this Committee. They have all come from the industry. That is the concern and I would love to have heard more from independent groups and I think it is disappointing for you in constructing the Agency and making sure it genuinely reflects public opinion, that it does reflect the consumers' voice.

Ms Keeble

1511. If the Agency cannot bottom public concern about food safety, then it will not work and if it cannot deal with the next food scare, because there are bound to be occasions that come—the organisms are not all going to go away because the Food Standards Agency has been set up—how do you see the Agency being able to extend its influence through the public, i.e. consumers, rather than just, say, relying on the pronouncements of scientific experts over the radio and things like that?

(*Dr Cunningham*) Quite clearly they will have to develop that expertise, as I said in response to an earlier question, in communicating effectively with the public. This organisation must engender public confidence from the outset otherwise it is not going to succeed. That is very important. That is why we must establish its independence from the Government, on the one hand, and its ability to criticise ministers and ministries, if necessary, as well as the industry, to demonstrate to people, consumers, that there is no political or industrial bias in what it is saying. It is there to represent the best interests of consumers and it is absolutely vital that we establish that from the beginning.

Chairman: It will be quite a challenge. We have got a very interesting diversion into other issues of great concern.

Mr Marsden

1512. Minister, if I can ask you about food contamination actually on the farm. In the past there have been serious food problems such as BSE, Salmonella, E.coli 0157 which have arguably, at least, resulted from decisions and actions of the farming industry and the supply industries which they would have to share the responsibility for. Under the proposals in the FSA White Paper, regulation of pesticides and veterinary medicines, as well as "field to farmgate" activities, remains the responsibility of MAFF. What additional safeguards, complimentary to the White Paper, will MAFF take to tighten up food safety standards in the approval, as I say, of veterinary medicines and on the farm generally?

(*Dr Cunningham*) The veterinary medicines issue remains the way it is rather than going to the Food Standards Agency for a number of reasons. First of all, we have an important and a national role there. We have got very well-established and robust systems in place and we thought on balance it would be wrong to scramble them. When I say the Veterinary Medicines Directive and the Veterinary Products Committee remain responsible to MAFF, the Food Standards Agency will have a power of override in this area if it thinks it is necessary. If on examination of what is happening the Food Standards Agency is dissatisfied with what is happening it can take a number of courses. It can ask for remedial action by the appropriate ministry, it can propose on its own account different action, it can make recommendations to the Secretary of State for Health to whom it will report, of course, for changes. So it will have a role there. It is not being excluded. As for the wider problems on farms, Paul, you are right, potentially microbiological contamination can occur right through the whole of the food chain. Principally, of course, pathogens accumulate in the gut of animals. Sometimes the animals are perfectly outwardly healthy but they can be carrying pathogenic micro-organisms and this is very difficult to deal with, but it is one of the areas that we must focus on in seeking better protection for the public.

1513. So is there any specific proposals that MAFF have in mind at the moment to deal with them?

(*Dr Cunningham*) The White Paper proposes that we should establish a joint Food Standards Agency/Agriculture Department Committee to co-ordinate a surveillance programme in these areas so that we can get an effective database and have proper systemic scrutiny of what is happening in the interests of safeguarding the food chain and therefore the public.

1514. Will the FSA then have power, if they come across such an instance on an individual farm, to be able to take action at that sort of micro level?

(*Dr Cunningham*) If there was to be a problem on an individual farm it would most likely come to the attention of the Ministry or the Agency or both as a result of the actions of the farmer himself. If the farmer recognises or realises he has a problem with his livestock there are statutory requirements to be followed and observed, of course, and farmers know that and would act accordingly. There are notifiable diseases which it is a criminal offence for a farmer to ignore the requirement to notify. So in these areas the farmers themselves would be likely to be the first people to draw attention to the fact that they thought there was a problem and then the normal procedures of veterinary inspection would be followed and yes, in certain circumstances this would normally be information shared by MAFF with the Food Standards Agency if it was appropriate to do so, if it was thought to be very serious as opposed to just some minor incident and again the Food Standards Agency would have the power to comment on the actions taken by the Ministry and publish its comments so that everybody would know what it was saying. I emphasise, it is a very powerful weapon at its disposal so that Parliament would know, the public would know, particularly important, if the Food Standards Agency felt dissatisfied with the Minister's response.

Mr George

1515. Not being a scientist, I would like to probe in areas of science, particularly in view of our Chairman's remarks about perhaps the failure on the part of some consumer groups to put forward sufficiently wide-ranging comments on the proposals. In the area of science there is a particular need for challenging and enquiring minds because there is a concern that the science of production tends to go forward well ahead with greater speed than the science of identifying the problems with those new forms of production. I would like to ask a few questions in the areas of pesticide, antibiotics and GMOs. First of all, on the issue of pesticides, we noticed that the US journal *Science* published findings showing that the carcinogenic effects of pesticides may be heightened if two or three pesticides are working in synergy. In particular, the findings indicate that in some mixes of two or three pesticides can be up to 1,600 times more carcinogenic than any one chemical on its own. Has MAFF commissioned independent research from institutes or universities into the synergistic effects of pesticides typically used on British farms, and the implications of their use for human health?

(*Dr Cunningham*) We have looked at the possibility of synergistic effects both on human health and on the environment. In the early 1990s the Advisory Committee on Pesticides considered a study on the possible interactions between about 400 pesticide active ingredients and concluded that such interactions were at worst additive and not synergistic. In 1994, again, the Ministry of Agriculture commissioned a review of available scientific publications, the literature, on the possible synergistic effects of mixes of active ingredients. The result of this review supported the Advisory Committee's earlier conclusion. The possibility of interaction between pesticide compounds is considered during the licensing process for them. These things are not given licences without the possible synergistic implications of the substances being checked in advance. So there is a great deal of work going on here and rightly so. The working party on pesticide residues, which reports to the advisory committee on pesticides, also examines residue levels

[**Mr George** *Cont*]

in food to a comprehensive monitoring programme and all its results are published. So we do focus on this because, as you say, it is potentially an area of difficulty, but as yet fortunately there do not seem to be major or serious problems.

1516. But is that advice communicated to those farmers using the pesticides? In other words, you may well be aware of the synergistic effects, but if you are bringing a new pesticide onto the market it is possible that some users may not be aware of the potential damage caused by one pesticide being used in combination with another.

(*Dr Cunningham*) Yes, but I have just said the potential for synergistic reaction is checked before a product can be licensed and if there was any doubt about it it would not be licensed. If there were clear dangers in these substances then the licence would not be granted. We are vigilant in that regard. If there are suspected incidents then the Health and Safety Executive's agricultural inspectorate investigate them immediately, if there is any suggestion that the use of a pesticide has caused ill health and the investigations are reported to the Pesticides Incident Appraisal Panel which publishes an annual report on its findings. So all this information is in the public domain. Because we are continually vigilant on this, I have just today asked all farmers and growers who are thinking of using pesticides to stop first and consider whether the use of the pesticide is absolutely necessary in the first place and, where possible, either to reduce their use of the concentration of the pesticides or eliminate their use altogether, if that can be done.

1517. Do you operate at all an international dimension to your comparison of research because clearly the EU as a whole takes a different approach and has different regulations, bands of different pesticides and different herbicides to that in Britain?

(*Dr Cunningham*) Yes, we do have international exchanges of information and of experts and we are working with our European Union partners, indeed with the United States of America, where possible, to harmonize the approach so that we do have a uniform approach to these matters. That is not always easy to achieve, let me say, but it is important that we try to establish the same basic guidelines and safeguards not only nationally but internationally too. For example, last week at the Agriculture Council we unanimously agreed a new veterinary equivalents agreement between the European Union and the United States of America.

1518. One area where there is particular concern increasingly on an international level is that of microbial antibiotic resistance in relation to food safety. Professor Pennington noted that the phenomenon of antibiotic resistant microbes poses "a very serious problem". He considered this in his evidence to us to be one of the most serious issues facing our own inquiry and the future of food production. We note from the Ministry's memorandum that in 1996 a working group was established on microbial antibiotic resistance in relation to food safety, with among other objectives the aim of assessing the likely scale of the problem of human and animal infections caused by antibiotic-resistant microbes in the UK food chain. Could you provide us with some indication of the preliminary findings of that working group?

(*Dr Cunningham*) No! The answer is no because they are still working and they have not reached any preliminary conclusions themselves that I am aware of. I never like saying no when people ask for information, but I do not have it so I cannot give you it.

1519. When do you think any results will come out, preliminary or otherwise?

(*Dr Cunningham*) I understand they hope to produce a report later this year. Let me say in respect of your question about Professor Pennington, it is exactly because we share the concerns of Professor Pennington and others that this year MAFF is spending £460,000 on research into antibiotic resistance.

Chairman

1520. I would be interested to know what your personal feeling is of the priority of this issue. I was struck when I went to the States that it was the one issue that Americans seemed to be worried about. The other issues, GMOs, pesticide residues, even the pathogen issue seemed to be of much less importance to them. They could not understand hormones in beef, for example, but antibiotics seems to generate a certain amount of excitement. Do you share that sense of excitement and concern?

(*Dr Cunningham*) I share a sense of concern. I am excited by science in general, being a scientist, although my daughter regards that as a breach of the Trade Description Act these days being a newly qualified scientist herself! I am exercised by this as a problem and that is why we are focusing on it, and Mr George is absolutely right to say this is an important area. We are doing research on antibiotic resistance mechanisms, Salmonella and campylobacter, for example. We are carrying out a workshop to review the current state of knowledge internationally in this area and we are carrying out surveillance to establish the current level of resistance in pathogens in farm animals. So we are devoting a considerable amount of attention to this problem.

1521. Do you make a distinction between their use as medicines and as growth promoters, the antibiotic issue?

(*Dr Cunningham*) They are separate issues but we focus on them both. As you know, there is currently a European ban on the import of American beef, for example, exactly because it has got the hormonal growth promoters in it[1]. Secondly, recent European studies have also discovered residues above acceptable levels in some specimens of American

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[1] *Note by witness:* "The Minister's reference is to a report of a Commission mission to the USA on 3–13 November 1997 to examine residues surveillance programmes. The report identified deficiencies in some of the analytical methods used and noted that the programme did not cover an antibiotic, chloramphenicol, which is not permitted for use in food-producing species in the European Union nor in the USA".

[**Chairman** *Cont*]

beef. So these are real problems which we have to focus on not only nationally but internationally as well.

1522. Is that news you are giving the Committee about the unacceptable levels of residue or is that in the public domain?

(*Dr Cunningham*) It is now! Yes, I think it is.

1523. This is hormone residues we are talking about, is it?

(*Dr Cunningham*) No, non-hormone residues, other residues.

1524. It is interesting to note the Americans do have a concern. They do not understand the other concerns we have in this country.

(*Dr Cunningham*) What is important in all of these things, Chairman, is, firstly, to establish with our international trading partners that we only make judgments and decisions on the best available science and people should accept that. In respect of the ban on our own beef, as you know I have been at pains to make it clear to our European partners that we cannot accept the judgments on anything other than a sound veterinary science or medical scientific basis; no other judgments are acceptable. Political expediency or economic advantage cannot be accepted in international trade in these matters.

Mr George

1525. Clearly in America they do not share the same level of concern as there appears to be in many voluntary organisations and I think in the public at large about the likely effects of GMOs not just for the consumer but for the environment as a whole. Whilst it is appropriate that we should be asking questions in this inquiry about genetically modified organisms from the point of view of food safety, it is probably also appropriate that we draw attention to the fact that they do also have an impact, or could have, on the environment as well including the conferring of tolerance, of herbicide resistance, if you like, to wild species in the countryside, but there are many concerns. Certainly Professor Pennington in his evidence to us also expressed deep concern about both the unforeseen effects of GMOs and the general concerns about GMOs. What are your views on the likely tremendous increase in the global production of genetically modified crops, and specifically the implications for human health in terms of the potential importation of many new genetically modified foods including genetically modified soya?

(*Dr Cunningham*) Genetically modified crops are a reality. I do not think they are going to go away. What we need to do is, first of all, ensure that if they are to be licensed it is safe to license them. Secondly, if they appear in the food chain, that consumers know they are in the food chain and that products are clearly labelled so that consumers have a choice in the matter. That is what we are working to achieve in the European Union with our partners. In the meantime, on a voluntary basis we have a system of labelling where if food has genetically modified material in it it must say so. If it may have genetically modified material in it it should say so. If it does not have then it can definitely say that it does not. Food manufacturers and retailers are pretty responsible about this. For example, I think it was Sainsbury's recently did a trial with tomato puree.

Chairman

1526. And Safeway's.

(*Dr Cunningham*) And they sold them side by side and the consumers almost chose them on a 50:50 basis. If people have the information they can make the choice.

Mr George

1527. I appreciate that the labelling is a very important aspect of it and presumably you would encourage the fact that the Food Advisory's Committee labelling standards for these products should be adequate. What other safeguards are you considering, because it is simply one small label on the packet? Would you say that the Food Advisory Committee should ensure that there is adequate information within the retailing environment other than a small part of the label on the package itself?

(*Dr Cunningham*) We take the view in the Ministry of Agriculture that labelling is very important, that it should carry clear unambiguous information to the public which should be easily readable to them. We place a high priority on that, as increasingly do consumers because, for the reasons you are giving, they want to know everything it is possible to know about the provenance of their food, whether it is an animal product or a vegetable product, what is in it, how it has been treated both in terms of animal welfare conditions as well as feedstuffs or pesticides or antibiotics, whatever it might be. It is very important that the public have this information. What is clear is that where people can produce assured products the public like them and will buy them. In the case of organic produce, for example, they are willing to pay a premium for it.

1528. On the issue of being assured there is a concern that there is not sufficiently adequate scientific inquiring into the effects of genetically modified organisms. What research is going on in this country to anticipate this problem?

(*Dr Cunningham*) I do not accept that statement and I think the science is well understood and, of course, you are right, scrutiny is necessary, but they are now clearly established and there is no sign they present any danger to the public.

1529. Or to the environment.

(*Dr Cunningham*) Or to the environment as of yet, but I think it is important, as you say, that we should be vigilant about that.

1530. You do understand that consumers in this country have been reassured on the issues of OPs and other foodstuffs in the past.

(*Dr Cunningham*) On what, sorry?

1531. On organophosphates. You do understand that consumers are going to be concerned about the introduction of genetically modified organisms and they feel that research into them should be continued.

[Mr George *Cont***]**

(*Dr Cunningham*) Research into them does go on, as I have said. The fact is that, as I have said on the recent trial in supermarkets, the public were content to know that the particular product contained genetically modified substances and were able to make a choice. It is important that they have a clear choice. A sub-group of the Advisory Committee is considering the practicalities of post-market surveillance of novel foods, including genetically modified foods and will be making recommendations to me and the Department of Health in due course.

1532. Is there any risk at all with genetically modified organisms?

(*Dr Cunningham*) There is no such thing as zero risk.

1533. So in the same way as you approached the ban of beef on the bone would you say that you are saying to consumers that they are taking a risk?

(*Dr Cunningham*) No, I am not, not in respect of products on the market with genetically modified material in them. I am not saying they are taking a risk and I do not think there is any evidence that they are, nor do I think it bears any relationship to a decision to do everything possible to exclude BSE from the human food chain.

Chairman

1534. I have to say, Minister, I agree with you that at present there is no scientific evidence to suggest that GMOs are a threat to human health, but science does move on and, of course, the Food Standards Agency is not just concerned with reality, it is also concerned with perception and often consumers need reassurance about things that perhaps are actually perfectly alright. The problem with GMOs is the way the product has been mixed. You cannot tell a consumer there is no GMO in the product and that is the difficulty, is it not?

(*Dr Cunningham*) Therefore, we must say this product may contain genetically modified organism. I know that is not wholly satisfactory, but I think the consumers have a right to know.

1535. So will it soon be on every manufactured food, "This product may contain GMOs"? That is the difficulty with the vast array of crops that are now available on the market, particularly in the States.

(*Dr Cunningham*) Not necessarily. I think that is carrying the argument a bit too far.

1536. Virtually every bread, cake product certainly.

(*Dr Cunningham*) I am not even sure that that is so.

Chairman: That takes us nicely on to the precautionary principle which is something that Mr Todd wanted to ask you about.

Mr Todd

1537. We had a visit to the USA last week and among the most interesting things that came out of that was the comparison of esteem held for scientists and their opinions on food matters and politicians and their pronouncements on food matters with that held here. I have interpreted before the view of many people I meet that they do not much trust scientists on food matters and they trust even less a politician quoting a scientist advising the public on food issues. That clearly is not the case in the States, at least amongst those that we met. How do you explain that apparent difference of opinion? Perhaps you would disagree with it.

(*Dr Cunningham*) No, I think as a general proposition, Mark, you are right to say that the consumers had lost confidence to a large extent, for example, in the Ministry of Agriculture and in politicians and scientists to give them honest, dispassionate advice. I think it is for those reasons, among others, that we decided to establish a Food Standards Agency, so that these issues would be clearly separated from ministers and politicians and be done as independently and as dispassionately as possible and communicated to the public on that basis. There is a need to re-establish credibility and confidence in them.

1538. Certainly in part of the evidence I have heard from you you have referred several times to the importance and the primacy of scientific advice and good science in this area. We have had a lot of scientific advice in the past which has either been interpreted poorly to our citizens or has been incorrectly based.

(*Dr Cunningham*) Or ignored.

1539. Yes, and has led to the current crisis of confidence that you referred to. How are we to restore that bearing in mind the fact that many of the scientists involved will no doubt be pronouncing again on these matters and will be key components of the Food Standards Agency?

(*Dr Cunningham*) I do not think we should lay all the responsibility for this at the door of scientists, first of all. I think a considerable amount of this problem results from failures of the political process, failures of openness, failure to be completely candid with people, sometimes failure to act in a prompt and coherent manner. We cannot just blame scientists for this loss of confidence in what has gone wrong. After all, there are a number of scientists who have made clear very recently at the judicial inquiry into BSE-nvCJD that they believe that if only their advice had been heeded earlier at least some of the tragic consequences could have been avoided.

1540. Your White Paper refers to the principle that "decisions and actions should be proportionate to risk." You have said yourself just now that there is no such thing as no risk. How do we arrive at advice to consumers that weighs up this issue of what is an acceptable or reasonable risk for people to take?

(*Dr Cunningham*) First of all, I emphasise again the fact that these decisions must be based on the best available scientific advice and, secondly, where appropriate, on a proper risk analysis of what is involved, but in the end those of us responsible for safeguarding the public sometimes have to make judgments maybe when the evidence is incomplete or maybe when the advice is not as precise as we would like it to be. So in the end sometimes judgments have to be made. I made a judgment to do everything I could to exclude the infective BSE agent from the BSE chain. That was a judgment.

[**Mr Todd** *Cont*]

1541. And the right one in my belief. Can I just pursue that a little further. Since a risk evaluation is based on the evidence that you have available at that time, which may of course be incomplete, it almost certainly is, should not the Food Standards Agency adopt the precautionary principle in its decision-making, always giving the benefit of the doubt to the possibility that future evidence might arise which shows that there might be a risk?

(*Dr Cunningham*) Yes, it should and it will proceed on that basis, as I do myself.

1542. If that is the case, how will we seek to fit that in to a European policy framework where, after all, you could be accused or would claim to be operating that same principle in relation to British beef?

(*Dr Cunningham*) Increasingly, I am pleased to say, there is an acceptance among our European partners that this is the approach which must be followed. I do not want to necessarily go into great detail on the consequences and the problems associated with a ban on British beef. I think they are well known. But there, too, as you know, Mark, we have recently made the first crucial breakthrough on the basis of demonstrating, on the one hand, that we have taken every reasonable precaution to safeguard British beef to ensure that it is safe to eat, we have demonstrated our determination to meet the obligations placed on us by our European partners at the Florence meeting and, finally, they have accepted our case and that is very good news and we would intend to press forward on the date-based export scheme. Senior official Richard Carden is sitting here in the room somewhere behind me. He spends more time in Brussels than I do and that is on average two days a week for me! We are determined to do everything we can to press forward on the basis of the best available veterinary and scientific advice and safeguarding the public on the basis of the precautionary principle and insisting that decisions are taken on that basis.

1543. We have not yet been able to persuade all of our European partners to adopt the sensible principles that you have put down. Those resisting are claiming that they are adopting the precautionary principle themselves. Whatever the evidence may be they remain insecure about the safety of British beef. It is the difficulty of how you apply this precautionary principle, what it means and who is interpreting it. I am just seeking to explore a little further how you would apply the precautionary principle yourself.

(*Dr Cunningham*) First of all, on the basis of continuous surveillance and, secondly, on the basis, as I have said, Mark, of always erring on the side of precaution in the interests of safeguarding the health and well-being of people. That is the basis on which we proceed. Incidentally, in relation to our European partners, the voting was 11 for, 2 against and 2 abstentions. That was the kind of result which three months ago we would not have thought was likely at all. So that is a demonstration of how our colleagues and civil servants, Mr Carden and others and our veterinary officials and our scientific advisers, have made tremendous progress, and it is a great credit to them that we have achieved this result, but it is on the basis you describe that we shall proceed.

Chairman

1544. The trouble is, Minister, that one man's precaution is another man's over-regulation. I was debating with Professor Lacey on the radio the other day about, among other things, the Pennington Report and he was very critical of Pennington for not saying that food establishments should not be allowed to sell both raw and cooked meat, because the risk was unacceptable. I disagree with Professor Lacey profoundly, but for him that was the right precaution to take, that an establishment should not sell both raw and cooked meat. When the Agency takes a decision which you or Parliament thinks transcends the precautionary principle and goes into over-regulation and over-zealousness, what can we do about it?

(*Dr Cunningham*) One of the guiding principles is that it must not over-regulate and it must have due regard in its decisions to the best available scientific advice and avoid unnecessary over-regulation. That is quite clearly spelt out in the White Paper. Given, as I have said, my colleagues and I intend to ensure that the people are appointed for their knowledge, their judgment, and their independence, I believe that we can avoid the threat of over-regulation which you describe.

1545. Is there not a danger that some of the bigger businesses in the food business, who find it quite easy to meet the most onerous restrictions, might take the opportunity of securing competitive advantage by urging an excessive zeal on the Agency? What will you do about that?

(*Dr Cunningham*) They may do so but that does not mean the Agency is going to take their advice. I do not think anyone should envisage the Agency in the hands of perhaps a dozen people at the height of their powers and of independent repute are going to be a push-over for the industry, or ministers, or anyone else.

Chairman: We want to return to the character of the leadership of the Agency in a few moments' time, so we will pick up that debate later on.

Mr Marsden

1546. I want to turn to the FSA budget and personnel. The White Paper provides a comprehensive account of the proposed activities of the FSA, but it is extremely vague when it comes to the size of financial and personnel resources. Based on what you currently think, do you have information on the likely number of personnel including those seconded from the Department of Health and from MAFF?

(*Dr Cunningham*) Paul, they are not going to be seconded, they are going to be totally transferred, and we have already taken the first steps in that direction now with several hundred MAFF civil servants and somewhere between 50 and 100 Department of Health civil servants being brought together as the core of the Agency. The Agency will, in addition, take over responsibility for the Meat Hygiene Service which employs currently, I think, another 1,500 people in round numbers, and there will be others of course who need to be appointed. I cannot give you an exact final number at the present

[**Mr Marsden** *Cont*]
time, but this is going to be a very significant and substantial organisation, as I have said, completely independent from ministers and ministries but accountable to Parliament through the Department of Health, as we all very quickly agreed and as Professor James recommended.

1547. In terms then of the actual budget of the FSA, the White Paper talks of an annual cost of in excess of £100 million, and it talks about the existing industry costs of £35 million. Where will the rest be funded from?

(*Dr Cunningham*) Just let me take one step back. A great deal of work is done in this area now by local authorities, by the Meat Hygiene Service in respect currently of MAFF and in other ways. There will be one-off starter costs for an organisation of this kind. It will have to find headquarters which will be in London, which will not necessarily be cheap. There will perhaps be some transfer costs. It will have its own research budget, which we say something about in the White Paper. Let us say, for the sake of argument, and this is not a definitive statement, the total costs of the Food Standards Agency when it is up and running were of the order of £200 to £250 million. It is wrong to assume that is all a new charge on industry. Some of that money is being spent now. The questions to be decided—and the White Paper, as you rightly say, deliberately leaves this open for discussion and consultation—are how and on what basis are the costs of the new Agency going to be raised? We, as consumers and taxpayers, have to pay in the end, so it is not a question of paying or not paying, the question is how do we pay, how do we meet the costs of this Agency? At the moment we meet some of them now, as I have said, through taxation, some through industry, and some through local authority costs for the work and the role of environmental health officers. We have deliberately said to industry in particular that we would welcome their suggestions and proposals for how the funding of the Agency should be raised. Just let me say, we are talking here of a food industry which generates expenditure of about £52 billion a year, so we are talking about very substantial amounts of expenditure in this industry sector, so figures of the order of £200 million may seem a lot—indeed it is a lot—but compared with overall expenditure in this industrial sector as a whole of £52 billion, set beside that figure it is a very small amount indeed.

1548. I am a little surprised you say the cost will be £200 to £250 million—

(*Dr Cunningham*) I said, "Let's say for the sake of argument", I am not saying those are definitive figures, and please do not—

1549. They are taking into account local authorities as well?

(*Dr Cunningham*) Yes.

1550. I understand where you are coming from in terms of you are saying the costs should fall at some appropriate point in the food chain, if you like, but in terms of the fact there has to be some sort of taxpayers' additional money, would you see a split between MAFF and DoH existing budgets, or are you saying it is cost-neutral, that there will be no additional costs for the taxpayer once it is up and running?

(*Dr Cunningham*) What I am saying is that that decision has not been made and we are considering this. There is a genuine open consultation going on here about the nature of this Agency and how it is funded, and we have not got some secret blueprint, Mr Rooker and I, that we are withholding from people or that we have already made up our minds on. We have spoken in many conferences, answered questions, had a great dialogue with consumers and the industry on these issues, and they are yet to be decided. So much so in fact that we have said that when we have analysed these very large number of responses we have had, and when industry have given us specifically their thoughts on financing, we will publish another paper specifically on the options for financing. This is why I say we are going to all possible lengths to try to create the broadest possible consensus for every aspect of this Agency and its work.

1551. The reason why I pursue it—

(*Dr Cunningham*) It is an important question.

1552. Absolutely.—our iron Chancellor is clearly going to be concerned about the spending and any increase clearly would have to be either quantified as quickly as possible for the sake of public finances, or it could be just a statement of principle early on to say that it will be cost-neutral as far as the Exchequer was concerned.

(*Dr Cunningham*) One thing is clear, whatever conclusions we may come to, the ministers involved—that is Frank Dobson, Tessa Jowell, Jeffrey Rooker and myself—will have to be agreed with other colleagues in the Government, not excluding the Chancellor of the Exchequer.

1553. Okay. Coming back, you mentioned the research budget, I think it mentions in here that that would form the largest part of any contracted-out services. Any ideas at this stage as to the proportion of what that budget might be? I understand the actual costs will still have to be agreed?

(*Dr Cunningham*) The Agency will have the absolute freedom to place its research contracts wherever they judge to be best in terms of the quality of the work and the value for money. That will be a matter entirely for them, we are placing no obligations on them in that regard at all. Some of it we expect will be carried out in existing MAFF agencies perhaps, some of it in universities, some of it in the private sector. It is a matter entirely for them.

1554. So it will be on a contract basis with a variety of different factors. Is there any specific type of tendering process you have in mind?

(*Dr Cunningham*) I would guess it would be the normal process of peer group review of the nature of the project and then a normal, competitive tender from those interested in carrying out the work. I cannot envisage it being done in any other way.

1555. With fixed term contracts rather than open-ended ones?

(*Dr Cunningham*) I would be very surprised if there were open-ended, on-going contracts. We do all our own research, the Ministry does our research, on that basis. We certainly do not give people open-ended contracts now and I cannot see any circumstances which would justify the Agency doing that.

Chairman

1556. The present MAFF spends a great deal of money on research and you are effectively handing a lot of responsibility for that over to the Agency, so you will be reducing your expenditure on research. Will you set any guidelines for the Agency as to what proportion of its budget it should spend on research to make sure you preserve that research? Or will you give it *carte blanche*? How much money will you be taking from your budget and handing the Agency on research?

(*Dr Cunningham*) The White Paper gives a figure of £25 million.

1557. That is still the figure you think?

(*Dr Cunningham*) Yes. But, of course, the Agency may decide that is not enough and they may want to spend more. So long as they have the resources available to them, there is nothing to stop them doing that.

1558. I may have missed this in your earlier answers to Mr Marsden, so I apologise, but there is a view that the Agency needs a large injection of fresh blood, not just Department of Health and MAFF individuals, are you going to get a large number of outsiders in? Are you going to have open recruitment?

(*Dr Cunningham*) Yes, the senior positions will all be advertised.

1559. Not just the senior ones, at the junior level too? Culture spreads throughout an organisation.

(*Dr Cunningham*) There is a core, a body of people, already there and I have mentioned the several hundred people from MAFF who work in this area now who will transfer to the Agency, and the Meat Hygiene Service which is currently answerable to MAFF will become answerable to the Food Standards Agency. Those people are in post, we could not possibly dislocate that work by saying, "You are fired and you have to re-apply for your jobs." But all new posts, at whatever level, will be open to public competition and application.

1560. Do you expect a significant number of new posts? Not just shuffling civil servants around, in other words?

(*Dr Cunningham*) We are certainly not just shuffling civil servants around, because although they will retain their Civil Service status, they will be answerable to the management of the Food Standards Agency and not to ministers. I do not want to get at cross-purposes as to what you are saying, but these people are doing an excellent job, they are highly qualified, vastly experienced people, who are already doing an excellent job in the interests of the public.

1561. So why do we need a new agency if they are doing this marvellous job?

(*Dr Cunningham*) Because of the reasons I gave in my exchange with Mark Todd. I will not reiterate them all now in the interests of time.

Chairman: For the sake of any future ministerial career I may have, I just want to say that I think civil servants do a first rate job myself, Minister! A fine body of men and women!

Mr Marsden

1562. Can I turn to operational procedures? The White Paper talks about a lot of responsibilities for the FSA, how do you think the FSA should convert those responsibilities into practical, day-to-day operational procedures? Also, how should the workload be prioritised?

(*Dr Cunningham*) These are matters for management decision, Paul, but clearly they must, we believe, prioritise their work on the basis of what are the most important areas in which they need to act to safeguard the public. As I have been saying earlier, we have identified what we think in the Ministry are the most important areas, they will be free to make their own independent judgments on that, but quite clearly they will want to target their greatest efforts on the areas where they think the biggest risks exist, or the poorest standards exist, in the quest for driving-up standards.

1563. In terms of operational procedures, I understand you are saying that autonomy lies with the management structured to be created, but will they, for instance, be looking at best practices abroad and from other agencies and so forth to try and improve standards and improve those operational procedures?

(*Dr Cunningham*) Yes, we want them to adopt the highest possible standards of management procedure and approach to the tasks and obligations that the legislation will place upon them. If it is necessary or possible to draw on better practices from elsewhere, then we will do so. We are all aware of experience in other countries, in Sweden or Denmark or the Food and Drugs Administration in the United States of America which I know you have recently visited. There is a considerable body of knowledge to be drawn upon.

1564. I assume you disagree with Professor Philip Thomas of the Scottish Agricultural College, who described the proposed organisational structure as "monolithic", with the Agency likely to become "bogged down" in the minutiae of its brief?

(*Dr Cunningham*) I do disagree, is the polite answer!

Chairman

1565. It has got quite a job on its hands, has it not?

(*Dr Cunningham*) Yes, it has, it has a very important job. That is why I keep emphasising the need for the best people available to take charge of this. This will be a flagship organisation.

1566. That leads us straight into Mr Todd's questions.

(*Dr Cunningham*) I can see if we go on talking in this way for much longer there will be quite a number of MPs and others applying to work for it!

Chairman: No!

Mr Todd

1567. Let us see if we can work on what the profile of this leader of the FSA might be.

(*Dr Cunningham*) "Leader", you mean the chief executive?

[Mr Todd *Cont*]

1568. Let us try the chief executive first. What qualities and background would you expect that person to have, because we are going to advertise so we presumably have an idea?

(*Dr Cunningham*) We have not written the job description yet, so these are my personal thoughts. Quite clearly we want someone of exceptional abilities and management skills. In my view, someone who has very considerable experience of running a major organisation which this will be, as the Chairman has rightly said. And someone who can command the support and respect of the very large number of scientists and technicians and administrators with which he or she will be dealing.

1569. So experience of running a large organisation with a lot of scientists in it?

(*Dr Cunningham*) Commercial acumen, of course. We are describing a paragon of virtue, I know.

1570. No, it is pretty critical that we get a clear idea as to who this person might be and, perhaps as importantly, who this person might not be because, if you refer back to my previous line of questions, what we do not require surely is someone who springs from the tainted well of poor advice in the past?

(*Dr Cunningham*) I am not quite sure what that means, Mark, but clearly we need a person of absolute integrity and probity, with good commercial and administrative abilities and judgment. This is a kind of circuitous discussion, I might say, because we are talking about the best possible person we can get as chief executive of the organisation.

1571. Yes, but certainly in any recruitment I have done I have had a pretty clear list of qualities I am expecting in that person. I would expect that in this case and that is what I am trying to tease out of you. You have not mentioned any experience of dealing with consumers.

(*Dr Cunningham*) In addition to the person who will be chief executive, there will be individual commissioners some of whom will have responsibilities and experience in that area. I do not expect everyone who is appointed to the organisation of necessity, from day one, to have experience in the consumer field.

1572. But is not one of the key features of building confidence with our consumers—and this is mainly what the establishment of the Food Standards Agency is about—to ensure that relationship is right at the top of the priorities of the Agency, and therefore should be a feature of the experience of the chief executive?

(*Dr Cunningham*) I do not necessarily agree with that. As I said, we have not written the job description for this person yet, but I would not assume it was absolutely essential that the person appointed had to have had personal experience of working in the consumer field. I do not make that assumption. I am not saying that I would rule it out either, but I do not assume that has to be so. In taking that view, if we did, we would certainly narrow down the field immediately to a relatively small number of people. I personally—and at this point I had better make clear these are personal opinions—would not want to do that.

1573. Would you see a scientific background as essential in this?

(*Dr Cunningham*) No.

Mr Todd: Okay. So that is the chief executive in broad terms—

Chairman: Very broad!

Mr Todd

1574. Very broad. I have not managed to squeeze a huge amount out of you on this. The chairman or chair person?

(*Dr Cunningham*) Mark, what do you want me to say? We want the best possible people we can get in these jobs and I would be looking for—

1575. Yes, but it does depend what we are looking for. You will not find the best possible person without saying what it is you are looking for.

(*Dr Cunningham*) Exactly so. I repeat again, we have not yet written the job descriptions for these people. Just let me go back a little. We have set out in the White Paper what we think the role and duties and responsibilities of the Agency are going to be. We have taken some tentative steps, as I have said, in bringing together civil servants, but until we have got legislation at least beyond the Second Reading stage in the House of Commons it would be rather presumptuous to be going a long way further down the track. We have to get the legislation established before we can go too far with these things.

1576. It would not surprise you, I think, to find that witnesses who have come to us have emphasised on several occasions the vital importance of the selection of the leadership of this Agency.

(*Dr Cunningham*) As I do myself.

1577. Indeed so. The reason they do that is some scepticism at the background and quality of those who the management of the Agency will inherit from your Ministry and from the Department of Health. Perhaps I am saying goodbye to a ministerial career in saying that—

(*Dr Cunningham*) Civil servants, whatever you say about them, do not appoint ministers, so feel free!

Mr Todd: They can certainly make it a little harder for you! Clearly in the public perception those coming from your Ministry have a background which people would doubt, whether fairly or not. It is really critical we get a leadership which sets that firmly in the past and places a stamp of clear advocacy of consumer rights and the responsibilities of the food industry right at the front of its task.

Chairman

1578. With Mr Todd's permission I will ask a supplementary on that. Do you rule out a career civil servant for either of these two posts?

(*Dr Cunningham*) I do not assume that either of them will be filled by a career civil servant. I think it would be wrong to rule anyone out at this stage. There are outstanding men and women in the public service. I do not want to go too far down this line of condemning them all as unsuitable or not able people. I do not think we are anywhere near the stage where we should be ruling people out. We will go on with the discussion if you wish but I am not sure that

[Chairman *Cont*]

it is taking us very far. There will be other opportunities, of course, to discuss these issues as we make progress with the legislation. We are not making a final decision here at this time about these matters.

Mr Todd

1579. Many people see the quality of this legislation. Bear in mind your earlier answer which was that you said MAFF had been doing an excellent job already and you were referring back to an answer that—

(*Dr Cunningham*) I said that these people working in the interests of protecting the public from the various risks that we have been discussing in the food chain have done an excellent job.

1580. Clearly that is not a view shared by all our citizens otherwise, as you said earlier, we would not perhaps be doing this.

(*Dr Cunningham*) No. That takes us back to the point of the need to rebuild public confidence in our food and to have transparent, complete openness of approach to these matters and to have clear policies, clear effective policies, and direction from those ultimately responsible. By that I mean by ministers at the moment. We are taking these issues out of the hands of the ministers exactly because the public have lost confidence in that process.

1581. As I think we have agreed.

(*Dr Cunningham*) Yes.

1582. Therefore the leadership which you are hesitating to define too clearly at this stage is critical to the success of that venture?

(*Dr Cunningham*) Yes, we share that view. We absolutely share that view that the leadership will be critical. What I am not able to do now is to give you a specific detailed job description for either the chair person or the chief executive of the Food Standards Agency. But, of course, much of what you say I agree with.

1583. Would you welcome a suggestion in that area from this Committee?

(*Dr Cunningham*) As I said right at the outset, I look forward to the report of this Committee. As I said in the House of Commons following your last report, it was an excellent, constructive contribution to the considerations that we were having about the problems in the beef industry. I hope your report on this issue is equally as constructive and as helpful as that one was.

Chairman

1584. Top that one! Thank you, Minister, for that. Who do you regard as the primary public face of the Food Standards Agency, the chief executive or the chairman or both equally, because the communication skills are clearly a very important qualification?

(*Dr Cunningham*) Yes indeed. I would expect having a chief executive means that will be the key person, that person will be the key person, but quite clearly we want someone in the chair who will also have all these attributes that we are describing as essential plus, in addition, the consummate ability to communicate effectively and openly with the public.

1585. It has clearly got to be a politician! Minister, we were going to ask you about some of the funding issues of the Agency but I think you have largely dealt with them in your earlier answers. Can I just ask one question. Do you regard farmers as food businesses who will be levied to pay for the cost of the Agency?

(*Dr Cunningham*) I certainly regard farmers as food businesses, there is absolutely no doubt in my mind about that. It is up for decision as to whether farms would fall within the compass of any system for raising revenue that is finally decided.

1586. This Committee applauded your decision to exempt farmers from two sets of charges a couple of weeks ago, £70 million. We are grateful to you for taking our advice, in anticipation of our advice on that occasion. I think farmers will have a view on exactly what price they should pay to the cost of this Agency.

(*Dr Cunningham*) Of course they will. I am very conscious of what has been happening to farm incomes. As an illustration we point out in the White Paper that relatively small sums given the scope—we point out in the White Paper there are some 600,000 registered food businesses excluding farms, I do not think farms are in that total—if there was a levy or registration charge or whatever one might call it of £100, just a flat rate, would raise £60 million. So you can see that we do not necessarily need to envisage huge charges, if indeed there are charges of that kind at all.

Ms Keeble

1587. I just want to ask about this because there has been quite a lot of discussion in the food industry around it. I wonder if I could have your comments on the following. The discussions focus on whether the money should be raised in the food industry by a flat levy, as you have mentioned, with the implication that I have heard some suggesting that it will be passed on to the consumer as the price they have to pay for a nanny state and all the rest of it, or should it be charges for services which the food industry would, by definition, have to accept or have to buy from the new Food Standards Agency, whether it was a licensing system or an inspection or something similar? I wonder if I could have your views on whether you favour a levy or a charge for services because there is a distinction, given that they have to have services?

(*Dr Cunningham*) Well, Sally, first of all, we must pay, as I have made clear. We do pay now.

1588. I accept that.

(*Dr Cunningham*) The question is not whether we pay but how we pay.

1589. I accept those arguments.

(*Dr Cunningham*) I cannot answer your second question because we have not made a decision of that kind yet. I keep on saying we are going to produce a paper on possible ways of financing the Agency and there will be further discussion about that. We have

[**Ms Keeble** *Cont*]

given the industry and others that assurance and I ram epeating it again today. I cannot answer your question.

1590. But you have had representations from the food industry?

(*Dr Cunningham*) We have had all sorts of comments. We have had some people in the industry accusing us of planning a food tax or things like that.

1591. Exactly.

(*Dr Cunningham*) I do not regard this as a particularly helpful comment. It is meant to denigrate the idea of the Agency, of course, not just to complain about the financing of it. We do pay now, as I have said, for the work that goes on to safeguard the public and we shall have to go on paying for it. The question is what method will we use to finance the Agency.

Chairman

1592. I do not think this Committee has heard any evidence at all from anyone attacking the principle of the Agency so I was quite interested in that last remark. Have you had such representations?

(*Dr Cunningham*) I was referring to this recent article in *Sunday Business*, Peter, which quotes the Food and Drink Federation.

1593. That is helpful. We might come back to them. Is there any ceiling on the Agency's expenditure? Clearly whatever method you choose to establish its funding there will be some concern that it might decide to raise and raise and raise the money it spends.

(*Dr Cunningham*) That consideration will be an important part of the consultation. We certainly do not intend that the Agency should simply go on raising money just because it feels it would like to have a very large bank balance. There will have to be some controls exercised on that.

Mr George

1594. We are of course impressed by the fact that the Agency will deal with issues of food safety and nutrition but communicating that, educating and promoting that message, is clearly important. While we were in the US we were shown a very forceful campaign prepared by the Food and Drug Administration entitled "FightBac!" and this was a particular campaign dealing with the issue of food safety in the home. To what extent will this Agency have a role in terms of promoting food safety in the kitchen, in the home?

(*Dr Cunningham*) It will have an important role. As I said, we have a considerable role, we—MAFF—at the present time in that area exactly because it is so critically important to get people to recognise the need for the highest possible hygiene standards in the home, in their kitchens, in their refrigerators, with their cooking utensils and in the way they prepare and store food. That will become the role of the Agency so it will have an important role.

1595. Will it still have the resources to undertake the kinds of campaigns that they are undertaking in America now?

(*Dr Cunningham*) It needs to be properly funded otherwise it will not be able to fulfil the objectives we set for it.

1596. How will this operate in terms of nutritional advice as well as food safety? It is clear that the messages on food safety are fairly obvious, the questions on nutrition are very often matters of opinion. How will the Agency advise, promote, educate the public?

(*Dr Cunningham*) The Agency is not going to tell people what they should eat. The Agency will have a role in the area of nutrition, as you rightly say. Some of that area will be reserved specifically for the Agency. Some role in nutrition will be reserved for the Secretary of State for Health because of the connection between food and illness which is clearly the responsibility of the Secretary of State for Health and there will be an area of shared responsibility. That is a balance which we struck in drafting the White Paper having listened to the arguments from the food industry and from others, consumer groups and others, food experts, about the role of the Agency.

1597. Given the actions that are undertaken now, how would you say the Food Standards Agency could improve on what is provided now in terms of public education of both food safety and nutrition?

(*Dr Cunningham*) I am sure we can improve in a whole number of areas. Firstly would be communication, secondly would be in the area of monitoring and surveillance, thirdly would be the performance of local authority inspections, for example, where there is a wide range of different levels of performance. Right across the board there are opportunities for improving our performance in this area, as we have demonstrated ourselves in the ten months since the election. I have read into the record some of the things that we have done in terms of publishing information, making it available to the public when it was not available before, so right across the range of its activities I am confident that this Agency can improve on what we are doing now.

Chairman

1598. On this point can I ask, this may be transgressing into the area of the Health Committee, the Health Education Authority gets only a very brief mention in the White Paper, and not surprisingly perhaps in their response to the White Paper the Authority have said: "We believe that implementation of long term communication strategies should be contracted out to those who have the expertise and experience in this area, including the HEA. This would ensure the best use of resources, skills and experience". Would you go along with that view?

(*Dr Cunningham*) In general, yes. I think that in general the Agency will want to contract out its work wherever that is appropriate and necessary and make use of the best possible advice and expertise.

Chairman: A question about targets, this worries me a great deal. We have heard evidence from distinguished experts that the only target that really matters is reduction in food borne illness as a result of the Agency's work. Now I have to say I do not

[**Chairman** *Cont*]

think that is going to happen. I think there will be an increase in reporting of food borne illness. You yourself earlier in this evidence session talked about the under reporting. If the Agency succeeds in its job in sensitising the general public to the issues around food safety there will probably be a substantial increase in reporting, doctors are more likely to report. I myself was a victim of food poisoning twice in the last six months and on neither occasion was my food poisoning reported to anybody.

Mr Mitchell: *The Guardian* had the detail.

Chairman

1599. *The Guardian* Diary that is true. My own view is that to set a target for reducing food borne illness would probably lead to certain failure for the Agency. Do you agree with that and, if so, what targets would you set for it?

(*Dr Cunningham*) I think it is important that we should be able to measure the Agency's performance against the key objective of protecting the public health in respect of food but we need to develop our thinking in this area and make sure that any evaluation system is robust and works in practice. We are considering this at the present time. If your Committee wants to express some views on this that too would be welcome, Peter. Just let me give you some idea of the sorts of things we have been thinking about in this area of targets. Measures which show how effectively the Agency is achieving its aim of protecting the public health could be, for example, a reduction of the incidence of salmonella in poultry, an increase in the number of businesses introducing HACCP, an increase in hygiene assessment scores at meat plants, abattoirs and meat cutting plants, driving up standards there. Other measures, the percentage of local authorities audited annually by the Agency, could be an important bench mark of how it is getting to grips with its responsibilities. Customer service indicators, such as the length of time to answer correspondence. There is a whole range of possible targets. Timescale for publication of its advice to Ministers and Parliament. These are things that we are considering and there will be others. Measures which show how well it has obtained the confidence of its major users, surveys of what the public think and feel about it. One can get a reasonable list of targets which may be set for the Agency.

1600. I think you have named most of the ones we had thought of. Financial ones as well presumably?

(*Dr Cunningham*) Yes, it would have to have financial targets and financial discipline too, as I was saying in an earlier response.

Mr Mitchell

1601. Can I ask about imports. About 30 per cent of the food we eat is imported, how is the Agency going to function in respect of imports? What controls and powers will it have?

(*Dr Cunningham*) What will its role be on imported foods? It will have an important role here obviously. It will be responsible for legislation and guidance on enforcement, activities relating to imported food under the Imported Food Regulations 1997. It will have responsibility for enforcing food safety legislation in respect of imported food in conjunction with the port, health authorities and local authorities. The Agency will have a role in monitoring their performance in that regard. In addition the Agency will take on MAFF's responsibility for routine chemical and microbiological surveillance of food stuffs which makes no distinction between imported and domestic produce. That work goes on now and that will become the responsibility of the Agency, so it will have an important role to play.

1602. It has got a lot of things like traceability back to the source of any contamination, any residue, any food poisoning of any kind, it is going to want controls. Since all this is decided largely in Europe is it not going to be viewed as a burden on the British side of the industry which imports escape?

(*Dr Cunningham*) No. We work with our colleagues in Europe and internationally to try to get agreement on sanitary equivalents and phytosanitary equivalents and equivalent standards of food and food products generally. As I have just mentioned earlier in our discussion here today last week the Council of Agricultural Ministers unanimously agreed a veterinary equivalents arrangement between the European Union and the United States of America. It is important the people sourcing food into the European Union meet the minimum standards we require of them and that happens now and will increasingly be the case. Europe is I think the world's largest importer of food and the second largest exporter of food too in the world incidentally. So there is a huge trade in food. It is very, very important to us in business terms. It is equally important, however, that we do have minimum standards to safeguard the public and work on that continues and develops. It is an ongoing process.

1603. Europe's standards are going to be lowest common denominator and we want the Food Standards Agency to upgrade standards in this country. Europe's response is always somewhat slow and bureaucratic. I will give you an instance from last week where the FDA said they had an outbreak of food poisoning produced by strawberries from Guatemala which they traced back to six farms in Guatemala. The step there was to stop the imports, stop them altogether.

(*Dr Cunningham*) We do that now.

1604. We could, this country?

(*Dr Cunningham*) We do it now. Jeff Rooker took action just a few weeks ago to stop the import of pistachio nuts, I think it was, because they were contaminated. The imports were stopped. That happens now. We have the power and the ability to do that now and we do it. Mainly these things go unnoticed of course. It is not an infrequent occurrence that action is taken to stop products coming into the UK because they are seen by scientific analysis to be contaminated or unsatisfactory in one way, shape or form. There is nothing new in that.

1605. Suppose they came in via another EU state?

[**Mr Mitchell** *Cont*]

(*Dr Cunningham*) We still do testing and sampling and, of course, the people who are sourcing the foods require their own standards and do their own testing and sampling. That happens within the UK as well as within the European Union. You will recall, Austin, when I remind you that very recently a food processor in Carlisle, through its own microbiological surveillance of its own product, detected the presence of E.coli in some meat which had been sent to Scotland and the product was withdrawn. That shows, to the credit of the company, that their own surveillance of their own processes was working and working well.

1606. I think it was actually E.coli in the strawberries but I cannot remember now. If they came in via Amsterdam, or Jeff's pistachio nuts came in via Amsterdam, would we have taken the same action?

(*Dr Cunningham*) Yes. We require certification. For example, we have taken, as you know, unilateral national action in respect of beef imports. I know this is a special case and maybe it is not a good example. We have taken that action in respect of beef imports and we require certification of that product to show that it has been subject to the same rigorous safeguards as our own beef. We would not always be getting away with unilateral actions, I do not want to mislead the Committee about that, but it is possible now to ensure through sampling and checking and monitoring and surveying that products are meeting the required standards and they are safe to bring in and for the consumers to purchase.

1607. Let me put two points which the British Poultry Meat Federation have put up. One is that they have written to MAFF pointing out that Italy has not put into national law the EC Poultry Meat Hygiene Directive which the Commission says is vital for the operation of the single market. It does not operate in Italy yet. Therefore, we are importing Italian poultry meat which does not comply with the wrapping and packaging requirements of the Directive. What control have you got over that?

(*Dr Cunningham*) I do not know of that particular case but, of course, what would normally happen in respect of failure to comply is that the Commission would take legal action, enforcement action, against the Member State concerned. It would begin that by issuing a Section 169 letter to the minister in the country concerned.

1608. Could you or the Food Agency do anything?

(*Dr Cunningham*) If they did not comply then the Commission has powers to stop that particular activity. We are carrying out checks on those specific imports to which you have referred to satisfy ourselves that they meet the minimum required standards.

1609. They also say ask about—

(*Dr Cunningham*) I said I could not comment on that but Jeff Rooker has just whispered in my ear.

1610.—the Poultry Meat testing regimes in Thailand and Brazil from which we import, I gather, 25,000 tonnes of poultry meat direct. What control do we have, because I gather that it is the responsibility of the Commission to test those rather than MAFF or the Food Standards Agency here?

(*Dr Cunningham*) We can in addition carry out our own tests of course. In many of these cases the importers concerned also, as I have said, set their own standards and requirements. I think it would be misleading to convey to the public that a lot of food is coming into this country which has not been properly scrutinised and checked and tested, sometimes at several stages of the production of the product.

1611. But there are still organisations like the Poultry Federation and horticulturalists who are complaining about residues on imported foods and these are not adequately checked for.

(*Dr Cunningham*) Let me say two things in response to that. If anyone produces any evidence to me or my officials that the products constitute a risk then we investigate that immediately and rigorously. You also have to bear in mind that some of the people who complain about imports do so because they have a vested interest because it is taking a share of their market.

1612. Of course.

(*Dr Cunningham*) So long as we are satisfied that the veterinary, sanitary and phyto-sanitary requirements are met then we do not stop those imports.

1613. You cannot dismiss it on those grounds.

(*Dr Cunningham*) I am not dismissing it. I am saying if there is evidence of concern then we take action to investigate it. I have also said that where we discover evidence of risk then the imports are stopped.

1614. My point is really not my own vested interest in eating the chicken—

(*Dr Cunningham*) I did not mean your vested interest, I meant the poultry industry's vested interest.

1615. We do not want the Food Standards Agency to be operating in a situation where it is felt to be a pressure, indeed possibly a burden, on the British food producing industry which does not apply to imported goods. That is the problem, a level playing field.

(*Dr Cunningham*) A level playing field. Okay. The fundamental guiding principle of the Food Standards Agency is the protection of public health in relation to food but we are also building safeguards in, as the White Paper makes clear, to ensure that the Agency does not impose disproportionate costs and burdens on British producers. That is also important and we recognise the importance of that and it is set out in the White Paper and it will be set out in the legislation. We do not want any burdens on British producers, whether it is farmers or anyone else, that are not justified on public safety grounds. The legislation, as I have said, will enshrine those principles.

Mr Todd

1616. Can I just return briefly to your reference to the widely supported ban on imported beef which failed to comply with the obligations we place on our own slaughterhouses. Does that not highlight the way in which some activities of the Food Standards Agency might run counter with our obligations

[**Mr Todd** *Cont*]
under the single market for instance? Of course, that unilateral ban has been contested by the Commission I believe. I do not know to what effect. Certainly that was the expectation at the time that it was announced.

(*Dr Cunningham*) Happily it has not been contested. France has also taken a similar approach, let me say, so we are not alone in taking that approach. What has happened, I regret to say, is that the decision taken in the Council of Agricultural Ministers in July of last year to apply specified risk material controls to the single market in beef has not been implemented. I gave you evidence about this at the time of your investigation into beef but just let me reiterate briefly. It was because of the failure to implement that decision that I took the action that I did.

1617. Indeed so.

(*Dr Cunningham*) Because it seems to me perverse to be taking these measures to safeguard our own beef, these rigorous controls on our beef, but to let beef come in from other countries where there was no incidence of BSE and not have the same controls.

1618. I agree, I was on the television defending it. I will only say it is interesting then that the Commission and our European partners who obviously dissented from our unilateral action have taken no steps of their own to seek to have our unilateral ban lifted.

(*Dr Cunningham*) They have not.

1619. That is three and a bit months on from that judgment.

(*Dr Cunningham*) Keep your fingers crossed.

Chairman: We will all cross them as well, Minister.

Mr Todd

1620. Let us all keep those fingers crossed. Good.

(*Dr Cunningham*) Can I just make a further point in response to that because it is an important question of course.

1621. Yes.

(*Dr Cunningham*) For our beef producers as well as in the interests of public health. It is not for want of trying that the Commission has not got a decision. This matter was on the agenda again at the Agriculture Council last week when, of course, I was in the Chair as President. We did try very hard, the Commissioner and I had a long discussion about whether we could put some compromise proposal on the table which would get majority support in the Council. Unfortunately the Commission officials did not agree with what I thought was a reasonable compromise and came forward with one of their own which only attracted the support of three Member States, not including the United Kingdom.

Mr Marsden

1622. Following on from Austin's point, it is impractical and undesirable to be checking everything in terms of imports but is it true that there is a systematic approach with checks, tests, audits on what those imports are before they get into the food chain in order to take the action you describe?

(*Dr Cunningham*) Paul, in a single market there has to be the free flow of goods.

1623. Sure.

(*Dr Cunningham*) In the European Union we cannot be stopping consignments any more than we want our partners and competitors to be stopping consignments of our products willy nilly. That is one of the great advantages of the single market. It is additionally important that in the single market, as I have just been saying in respect of beef, that generally we have the same standards, we have a level playing field. A great deal of work has gone on in the Council of Ministers and in the internal market council and elsewhere to ensure that is so. It is when we get into third country imports into the Union, the point that Austin was making, that we need to ensure that equivalents agreements are in place and that they are enforced.

Mr Mitchell

1624. Does that mean we cannot raise our standards above average European standards?

(*Dr Cunningham*) No, it does not. We can have any standards we wish and in a number of areas, in a number of circumstances, we already have some of the highest standards in the world. We do things that other countries do not do, like publishing the hygiene assessment scores of all abattoirs and meat handling plants, just to take an obvious one that I have mentioned already this afternoon. Taking the measures that Mark has been asking me about in respect of safeguarding beef by removing the specified risk materials, we have been in the lead on that too. We have had to be because, of course, we have had the worst BSE crisis.

Ms Keeble

1625. I wanted to see about some different possibilities for inspection and enforcement. To a great extent the ability to inspect and enforce will determine a lot of the results of the Food Standards Agency. In the White Paper it says that you are considering giving the Agency powers to direct local authorities' Environmental Health Officers or in cases of deficiencies to take over the enforcement. Given the evidence that we have heard, and you must have heard, about the varying standards that are sometimes applied by local authorities, I wondered what your views would be on two alternatives. One would be for the Agency to have its own dedicated team of inspectors and enforcers, given the EHOs have to do a large amount of work other than food work, or if you would consider some contractual arrangements, the Food Standard Agency being able to make local contractual arrangements, either with the EHOs or with appropriate bodies in the way we have done with the New Deal where local contractor arrangements have been put in place to deliver the services.

(*Dr Cunningham*) It is an important area where I think we do need to raise the game, raise the level of performance, Sally, but we have no intention of taking over lock, stock and barrel the role or the responsibilities of the Environmental Health Officers in this area. That was done by the previous

[**Ms Keeble** *Cont*]

government in respect of the Meat Hygiene Service incidentally. It is one of the reasons why there are some tensions between the Environmental Health Officers and the Ministry of Agriculture from time to time I think. We do not intend to do that. We intend that the Agency should work with local authorities helping them to drive up standards, as I have said. Local authorities themselves, incidentally, in some parts of the country have shown tremendous initiative in pooling their expertise. It is quite obvious that every local authority cannot have top level experts in every part of this area of activity but we know of some, I think as yet informal, relationships where neighbouring local authorities are pooling their own expertise and experience in these matters to the benefit of all the authorities involved. That is the kind of thing that one would want to see encouraged and perhaps developed.

1626. I take it you have completely rejected the idea of going down a Meat Hygiene Service role with this particular Agency. We were quite impressed by it.

(*Dr Cunningham*) The Meat Hygiene Service will become part of the Agency.

1627. No, no, I mean in terms of enforcement, having a similar model where the FSA would take over the functions of inspection and enforcement. Would you not look at the contractual arrangements on the basis that would give much greater clarity to the role of EHOs who currently do have a wide variety of other roles, so it would give greater clarity? It is a very familiar environment for both local authorities and Central Government to have clear contractual arrangements for delivery of services, do you not think that might assist the process? It does not have to imply conflict.

(*Dr Cunningham*) You yourself have got long experience in local government, Sally, and you know that some local authorities carry out their responsibilities in these areas excellently, expeditiously and punctiliously and others, I regret to say, do not. What we must do is what we were saying earlier, disseminate best practice in this area and drive up standards. Now there is a number of ways we can approach that and perhaps contracting is one such way which we can consider. In the end those are judgments which will need to be taken by the Food Standards Agency itself.

1628. Given that Central Government has got experience of delivering services on a contractual basis, particularly now through the New Deal, and also Central Government's desire to see food standards improved, do you not think that cannot be damaged by, say, a local authority deciding to cut back the environmental health budget? The same kinds of arguments are going on about education spending and so on.

(*Dr Cunningham*) Local authorities have statutory obligations in this field and if they are failing to deliver their statutory obligations that will be a matter for the Food Standards Agency to address. Now just what action they will take, how they will address it will be a matter for them and I suppose it will depend, among other things, on the circumstances.

1629. You will be prepared to look at the contractual model?

(*Dr Cunningham*) I would not rule it out.

Mr Mitchell

1630. Rounding off the import saga, I said did that mean we could not enforce higher standards than those in Europe and you replied that we had done so in respect of HACCP and we had done so in respect of beef. Can we enforce those higher standards if our Food Standards Agency does come in for higher standards traceability, residues, whatever? Can we enforce those on imports (a) from Europe, (b) from outside Europe?

(*Dr Cunningham*) Bear in mind it is not the Government who is making these decisions about imports.

1631. The Agency.

(*Dr Cunningham*) If you and I were traders in food and food products then we could impose on our suppliers whatever level of standard we decided was appropriate in the circumstances.

1632. Yes.

(*Dr Cunningham*) Some of our importers as you know, some of our big players in this area, already have very high standards imposed on their suppliers way above what is necessary to meet the current levels of European Union legislation. There is nothing to stop them doing that.

1633. Can we enforce our high standards on imports?

(*Dr Cunningham*) That is not something that the Government would want to do other than to ensure the minimum standards required as currently envisaged by our membership of the European Union or if there are additional hygiene standards of our own that we require to be met. Yes, in the end we can say that this product is not good enough, it does not meet those standards, it cannot come in. I have already pointed out one recent example where Jeff Rooker took exactly that decision and the imports were stopped.

1634. On traceability and residues?

(*Dr Cunningham*) We have got to do three things here. We have got to safeguard the public from health hazards associated with food imports. We have got to observe our legal obligations as members of the European Union and the single market. We have got to observe our obligations under the World Trade Organisation agreements too. We have got to keep all those three balls in the air.

Chairman

1635. Minister, there is so much more that we would like to ask you. We have been tantalisingly skipping over the surface of so many important issues involved. Can I just perhaps wrap up.

(*Dr Cunningham*) I know, Peter, that you are anxious to complete your inquiry and get your report out but if there is anything outstanding on reflection following this session or the session you had with my

[**Chairman** *Cont*]

officials and Dr Rubery from the Department of Health let us know and we will supply the information.

1636. We took a self-denying ordinance before we began not to ask for additional information to make sure we can keep to our timetable. The only thing my clerk whispers in my ear is please send the corrections to the transcript back quickly to make sure we can produce our report quickly.

(*Dr Cunningham*) I hope there will not need to be too many but we will do our best.

1637. Just two last points if I may. We had Professor Pennington here the week before last and he expressed a fear that the Agency could encounter a major food poisoning scare of some kind early on in its life which would totally discredit its operation quite unfairly. That is obviously a fear that he has. Do you share his fear? Do you have other fears? What else keeps you awake at night thinking about the future of the Agency?

(*Dr Cunningham*) One of the strengths in transferring the civil servants to whom I have referred into the core of the Agency is that these people are used to dealing with food problems and we have an emergency centre right here in London, in Smith Square, now which is ready to go at a moment's notice. We are not unprepared for that. Neither will the new Food Standards Agency be unprepared. It will not be starting with a whole lot of totally inexperienced people without the equipment or the expertise or the management capability for handling problems like that. Although I have never been present at one they do have trials. The suggestion that somehow this is going to be a totally new Agency with no corpus of experience and understanding at all is mistaken.

1638. I do not think that is the point. I think what Professor Pennington was saying was the perception is growing in people's mind that we have a Food Standards Agency and food poisoning ends but microbiology ain't like that, new bugs emerge.

(*Dr Cunningham*) You are absolutely right.

1639. We must be careful not to depress people's expectations of what the Agency can actually achieve.

(*Dr Cunningham*) Indeed. We cannot work miracles. In answer to your second question I am delighted to be able to tell you that nothing keeps me awake at night. Just lately I have had a few tremors about the circumstances in my favourite football club, but apart from that.

1640. I will not ask who that is, we might disagree about that. One very last question: this is a very great exercise in self-sacrifice for you and MAFF, handing away all these powers to the Food Standards Agency, all this authority, all this budget, all these officials, these fine men and women who serve you so well and have done for so long. Any news of any other changes in MAFF's responsibilities that you would like to share with us to make up for these losses?

(*Dr Cunningham*) Well, as you know, there have been some tentative discussions along the lines recommended in your previous excellent report, if I may say so. No decisions have been reached. In the end decisions on the machinery of Government are matters for the Prime Minister, not for me. We can make recommendations but it is a matter for him really and I am not able to announce any decision in that area at the present time.

1641. Minister, we will work hard to produce the one thousand and first submission shortly after Easter I trust. I think I speak for the whole Committee when I express our genuine gratitude to you for an exceptionally valuable and interesting session. Thank you very much for your time.

(*Dr Cunningham*) Thank you, it is a pleasure.

APPENDICES TO THE MINUTES OF EVIDENCE

APPENDIX 1

Memorandum submitted by The British Egg Industry Council (BEIC) (C1)

1. The BEIC is fully aware of the importance of food safety and does everything possible to safeguard the consumers of eggs by means of the Lion Code of Practice which is constantly being updated to take account of experience, scientific advice and other developments.

2. I enclose a copy of the latest version of the Code of Practice [not printed].

3. The Code of Practice, which is independently monitored, has to be followed by all those packers and producer/packers who wish to use the Lion on their egg packs. Nearly all the leading mutliple retailers will not purchase egg packs if they do not bear the Lion.

4. Around 70 per cent of the eggs marketed in this country come from "Lion" packers.

September 1997

APPENDIX 2

Memorandum submitted by the National Association of Catering Butchers (C2)

Thank you for your letter of 30 July enclosing a copy of the terms of reference of the inquiry into Food Safety.

The National Association of Catering Butchers was founded in 1983 and has been instrumental in raising the standards of catering butchery in this country. The main function of the members of the NACB is the supply of all types of meat to the catering industry. Accordingly we should like to concentrate our response on those aspects which relate to our members' business, namely the level of the safety of meat in the catering industry.

The NACB has very strict standards laid down in its Guidelines for inspections and these are obligatory for all members. The Guidelines cover quality management systems, HACCP, process control, temperature control, monitoring of all processes, record keeping and strict hygiene procedures for staff. The area of greatest risk in our sector would be in the cooking of meat or the handling of cooked meats. Very few of our members are involved in these "high-risk" areas. Some of our members, if required to supply cooked meats will simply collect from a supplier and deliver direct to the customer's premises, in order to avoid any contact between raw and cooked meats in their own plant. Those members which do handle cooked product in their own catering butchery plant have to comply with the strict high care procedures laid down in our Guidelines.

In our view NACB members are in the forefront of food safety and we will continue to do all in our power to promote the highest possible standards in the catering sector of the meat industry.

6 September 1997

APPENDIX 3

Memorandum submitted by Lobbying for GMO Labelling (C3)

SESSION 1997–98 FOOD SAFETY

FOOD SAFETY IMPLICATIONS OF GMO'S AND THE LABELLING OF PRODUCTS CONTAINING GMO'S

As the campaign co-ordinator of the attached list of companies I would like to highlight the following points in relation to genetic foods.

All of the companies and Trade Associations listed are campaigning for the labelling and segregation of all genetically manipulated foods. Many of these companies also support a complete ban on the use of GM foods.

The wholefood trade has been particularly badly effected by the introduction of GM soya. Soya based products make up a large proportion of the sales for wholefood companies and as well as being personally opposed to their introduction, the companies in our group have all reported that the customers who have heard about it are also opposed to the use of GM foods.

The wholefood trade alone has had to spend tens of thousands of pounds in the last year because of the introduction of GM foods. These costs have been in researching this issue (due to the lack of public information), informing their customers about the issue, contacting suppliers, changing price lists and labelling affected products.

We very much question the need for the introduction of GM foods and would suggest that as we should all be very aware by now there are tremendous advantages in organic farming methods for the environment and for human health; advantages for which there is well documented evidence. We were not aware of a particular public clamour for GM foods, whereas we are currently having to import large quantities of organic foods because there is not enough grown in Britain to supply the growing market.

The Safety Implications of GM Foods

Over the past year we have been researching this subject and can provide you with hundreds of pages of documents and articles that point out the possible and actual dangers of GM foods both to the environment and to human and animal health. I would be happy to copy these to you if required and hope that you will appreciate the expense and difficulty I would have had in including them with this submission, without any certainty that they would be considered.

Why have GM foods not been subject to the testing required before a new pharmaceutical is introduced. They are a scientific manipulation of nature that will/are currently, being fed to huge numbers of people.

On GM soya, for example, I am only aware of tests being carried out on animals for a period of 10 weeks and the independent reports that I have seen correctly in my view suggest that the tests carried out by the company who introduced it are flawed in a number of ways, eg:

1. Trials on animals are not always representative of what will happen in human nutrition.
2. There were no tests on long term effects.
3. There were no tests on GM soya isolates and derivatives.
4. Permitted residue limits of glyphoste herbicide have been increased 200-fold to facilitate the use of glyphosate tolerant soya. I have seen no evidence of testing for the possible human health effects of this.
5. The trials that were done were compiled and submitted by Monsanto (the ultimate financial beneficiary) and were submitted to "competent authorities". Therefore there has been no independent testing, only reference to the data provided by the company who stand to make the profit. Yet Monsanto have in the past been accused of presenting misleading research to "competent authorities". For example, according to an affidavit by Cath Jenkins of the American Environmental Protection Agency, Monsanto presented research on dioxins which included *"intentional misclassification of exposed and non-exposed workers, arbitrary deletion from the study of several key soft tissue sarcoma cases, lack of assurance of untampered records delivered and used by consultants, false statements about dioxin contamination in Monsanto products etc." (Kemner et al, V Monsanto Civil No 80-1-970, C Cl, St. Clair County, Illinois.*

What guarantees can possibly be given about the safety of dozens and indeed perhaps hundreds of GM foods which are all introduced over a very short time frame as is currently happening. Yes, it may be possible, over time and with adequate testing, to identify all of the possible risks and impacts that one new genetically modified organism could have on the environment and human health, but does anyone actually believe that it is safe to introduce all of these new organisms at the same time. Let alone their possible interactions with the environment and with us, how is it even possible to test what the possible interactions of these organisms with each other will lead to.

No prior debate or information. As food manufacturers, wholesalers and retailers we were never informed or consulted about the introduction of GM foods. Indeed there has been a complete lack of information and debate on the issue and this should be addressed as a matter of urgency. Surely in a democracy one role of government should be to provide unbiased and factually accurate public information before the introduction of something as controversial as GM foods. The leaflets that are available on request from a myriad of public agencies certainly do not fulfil this role.

There is not even a pretence of democracy about the introduction of these foods. It has been made clear to us by Environment Committee members of the European Parliament that the reason that GM soya will not be segregated is the threat of a trade war by the US and the threat of sanctions from the World Trade Organisation. So effectively the views of the British and European public are completely ignored, and the role of government has been reduced to one of placating the increasingly concerned public.

The whole issue has so far been characterised by the abuse of power and influence by the Trans-national companies who stand to gain massive profits and the compliance of politicians. It is a matter of speculation as to how many politicians involved in the debate will eventually find themselves with well paid directorships of BioTech companies, but is a sad reflection of the current situation that such cynicism seems well justified.

The distinction between products containing live GMO's and those produced from GM material is bogus and we reject it. There should be labelling and segregation of all GM foods. The deliberately introduced "loophole" of "substantial equivalence", is a cynical nonsense designed to avoid the need to label. The deliberate use of misleading terms and non-comprehensible language over this issue generally would perplex a Latin speaking lawyer.

19 September 1997

Annex

The campaign is supported by the following wholefood wholesalers, manufacturers, retailers and Trade Associations.

GreenCity Wholefoods—Glasgow
Essential Trading—Bristol
Rainbow—Norwich
Good Food Distribution—Powys
Queenswood Natural Foods—Somerset
Wholefood Wholesale—Dublin
Daily Bread Co-op Ltd—Northampton
Hanover Health—Edinburgh
Evergreen—Glasgow
Stirling Health Food Store—Stirling
Highland Wholefoods—Inverness
Infinity—East Sussex
Community Supplies—London
Marigold—London
Suma—Halifax
Oasis Food And Drink Co Ltd—Manchester
Wholefood Harvest—Strathaven
Grassroots—Glasgow
The Village Bakery—Cumbria
Sundance Wholefoods—Keswick

The National Association of Health Stores—(NAHS)

The Green Shop—Berwick Upon Tweed
Phoenix Stores—Forres
The Mulberry Bush—Ceredigion
The Hundredth Monkey—St. Andrews
Granovita—Northants
Food Therapy—Halifax
Clearspring Ltd—London
Juniper Foods—Dumfries
G & J Christofaro
Holos Consultancy—Forfar
Meridian—Denbighshire
Baby Organix—Dorset

Scottish Health Food Retailers Association

Arjuna Wholefoods—Cambridge
Holistic Health—Aberdeen
Single Step Co op—Lancaster
Arches Hotel—Bristol
Out Of This World—Newcastle Upon Tyne
Lembas Limited—Sheffield
Swindon Pulse—Swindon
Newton Dee Store—Aberdeen
Tropical Wholefoods—London

Please note that the views of these companies and associations may vary in relation to their over-all policy on GM foods but that they have come together over the issue of labelling and segregation which is commonly viewed as a very basic requirement.

APPENDIX 4

Memorandum submitted by Mr David Ross (C4)

I am writing to give evidence on the "food safety implications of the presence of genetically manipulated organisms in the human food chain, and the desirabilty and feasibility of labelling foodstuffs containing genetically manipulated organisms."

I believe that there should as a matter of urgency be a complete ban on the use of genetically manipulated organisms in the production of food.

Britain should support the position taken by our neighbours in Austria and Luxembourg. For once it would be good to see us do the right thing for food safety.

The risks associated with this new and untested science are too great and who wants the stuff anyway. I do not hear my friends or people in the street asking for "genetically manipulated soya please". I do hear them talking about the BSE crisis and the E-coli outbreaks and deaths.

Over the past 10 years I have been eating a vegetarian and now a vegan diet. A vegan diet means that I do not eat any products derived from animals, my daily bread, is taken from the diversity of natures store in the form of beans, pulses, grains and fruits that help make life a paradise.

Now however the mad scientists and the money men who control agri-chemical companies want to genetically manipulate these foods. We do not want or need genetic foods, we want organic foods, real wholesome nutritious foods that sustain people, not genetically manipulated, chemical sprayed experiments that we know from poisonous experience damage human health and the environment.

On labelling; some of the current legislation says that GM foods containing animal genes should be labelled, and alludes to the fact that this is to meet the needs of vegetarians, vegans and the many other people who would be especially concerned about this aspect of genetic foods. This does not meet the needs; I would want to, and I suggest that in a democracy I should be entitled to, know whether any genetic manipulation at all has been involved.

Having read up on many relevant scientific reports and arguments I am convinced that not only have not enough tests been done on any one of these genetic foods but especially that the idea that you can release hundreds of these "new creations" at genetically the same time is some form of madness. Indeed on reading about the many aspects of this issue I have some sympathy for the view of friends who watch the "X" files on TV; that it is a conspiracy by aliens.

Of course it is not, but it is the cynical greed for profits by multi-national companies many of whom already have an absolutely disgraceful record of endangering human health and the environment. "Monsanto" are but one example. No! The fact that scientific studies conducted by Monsanto and reveiwed by others says that genetic soya is safe does not convince me of its safety.

I hope that your inquiry will do much more than just hand a report to the proposed Food Standards Agency, there is need for our elected representatives to make their voice heard on these issues now and in every forum of government.

I was reading some articles recently about the use of genetically manipulated soya beans in baby foods, and on behalf of my own unborn child I will finish my submission now with a plea for you to ban the use of genetically manipulated organisms in food.

23 Sepember 1997

APPENDIX 5

Memorandum submitted by Torbay Council (C5)

I write with reference to the recent press notice dated 30 July 1997 and the request for comments on issues of concern relating to food safety.

I would comment on the recent introduction of the legal requirement that food businesses should identify steps within food operations that are critical to food safety, introduced by the Food Safety (General Food Hygiene) Regulations 1995. Although Officers discuss this new requirement with proprietors during inspections, as this does not need to be in writing, it makes it very difficult to decide as to whether a business complies with this requirement. Furthermore, to instigate proceedings when a decision has been made that the proprietor has not complied with the requirement is virtually impossible in the absence of documentation. A requirement to produce a simple written hazard analysis would be of both benefit to my profession as well as to the catering industry in general.

I would also wish to make a comment with regards to Code of Practice No. 9 in relation to the categorisation of food premises. In Torbay there are a large number of large catering premises including hotels and holiday camps where many hundreds, even thousands, of meals are produced on a daily basis. Variable demands, casual staff and on occasions vulnerable groups of guests render the operations liable to food safety hazards but at the present time this scale of operation is not considered production as would be the case within a factory type operation which in theory could gain a higher risk rating and therefore increased frequency of inspection. The majority of these type of premises are scored as a category C premises with the minimum frequency of inspection at 18 months which also means that seasonal businesses may miss an inspection if closed. Consideration should be given to either setting specific levels for numbers of meals produced on a daily or weekly basis or alternatively to weight large scale hotel and holiday style accommodation to reflect the additional risks associated with this trade.

26 September 1997

APPENDIX 6

Memorandum submitted by Mendip District Council (C6)

I have been passed a copy of your Press Notice No 2 of 30 July 1997 from the Chartered Institute of Environmental Health and in response to your request for comments on Food Poisoning in the UK the following comments are made jointly by myself and Dr Andrew Rouse, who is the CCDC for Somerset Health Authority.

1. The reporting system currently in place is reasonably satisfactory.

2. There is a need to clarify who does what with the information received through the current reporting system, for example who is responsible for evaluation of the situation and what action needs to be taken.

3. There needs to be clarification of what powers and resources are available for investigating outbreaks as currently no one seems to have the legal responsibility for doing this. As EHO's we assume we are doing food poisoning investigations on behalf of the CCDC but Dr Andrew Rouse tells me that in his opinion there is no legal responsibility for him to do anything with the information he receives from GP's other than to forward it on to Collingdale for statistical purposes. The situation is obviously clearer if there is food handling involved in a case, as Food Hygiene Legislation then comes into play.

4. We occasionally get queries from members of the public who have had, for example Campylobacter or Salmonella as to why we have this information which is, in their opinion, confidential between them and their GP, and I am of the opinion that this matter needs clarification.

5. We received reports directly from the Public Health Laboratory Service at Bristol if they identify cases of Campylobacter, Salmonella, Dysentery etc whether they are able to disclose this information to us needs clarifying, although in practice, I would not wish to stop this system as it works extremely well and means we are able to investigate potential outbreaks more quickly than through a formal reporting route using written notifications.

I would be grateful if you could take these queries and concerns on board. If you require any further clarification or information please do not hesitate to contact me.

23 September 1997

APPENDIX 7

Memorandum submitted by Mr Jeremy Leach (C7)

IMPROVING STANDARDS IN THE CATERING INDUSTRY AND THE FOOD RETAIL SECTOR

Summary

The current focus of the Food Safety (General Food Hygiene) Regulations, 1995 on hazard analysis and the training of staff should be maintained, coupled with firm but fair enforcement of the law. In addition food businesses should be made aware of what factors their customers are looking at to assess the standards of food hygiene in their premises, thereby encouraging businesses to raise their standards, for quality and marketing reasons. An approach based on these principles, with the prospect of increased business, would be far more compelling than the punitive sanctions of the law. The public too should be made more aware of what to look for in food businesses in order to assess standards of food hygiene. This could be made possible through a programme of education which would encourage the public to demand higher standards.

1. Introduction

1.1 I am an Environmental Health Manager working for Wealden District Council in East Sussex. I qualified in 1978 from the University of West of England (formerly Bristol Polytechnic) and have been involved in food law enforcement and education for the majority of the last 19 years. Since qualifying I have gained a Bachelor of Arts degree in Psychology and for the past three years I have been studying for the degree of Doctor of Philosophy at the University of Brighton. The subject of my research is public and professional perceptions of food hygiene in public eating places. I am a member of the Chartered Institute of Environmental Health and a Fellow of the Royal Society of Health.

1.2 The views expressed in this evidence are those of the author and not the Wealden District Council.

2. Review of the Law

2.1 The law relating to food safety is primarily in place to protect public health, to ensure fair trading practices and to maintain basic standards. The Food Safety (General Food Hygiene) Regulations, 1995 came into force on 15 September, 1995. They require proprietors of food businesses to identify and assess hazards and ensure that adequate management procedures are put into place to ensure food safety. The regulations also require a degree of instruction and/or training of food handlers and for authorities to give due consideration to whether a proprietor of a food business has acted in accordance with relevant industry guides to good hygiene practice. The new measures are particulary welcome as poor food hygiene practices are the main contributing factors to food poisoning outbreaks (Roberts. 1982).

3. Enforcing the Law

3.1 Since the introduction of the Food Safety Act, 1990 with the extra powers it contains, enforcement has become an issue of interest. In the early days of the Act rigorous enforcement was encouraged. This regime was then followed by a more "laissez faire" attitude. The Code of Practice on Food Hygiene Inspections (Ministry of Agriculture, Fisheries and Food. 1995) made it clear that in considering enforcement action, regard should be made to risks arising from any contravention, the nature of the food business and the nature and type of food handled.

3.2 In a document on risk assessment, the Local Authorities Co-ordinating Body on Food and Trading Standards (LACOTS. 1995) stressed the point that it is important that food hygiene inspections by local authority enforcement officers and any subsequent actions are related to risk. Failure to do this, according to LACOTS, is likely to place unnecessary burdens on the food business.

3.3 With all the guidance given, coupled together with, until recently the general atmosphere of Government de-regulation and media pressure on over zealous enforcement it is not surprising that the number of premises subject to Improvement Notices served under the Food Safety Act, 1990 has fallen sharply. In 1992, 41,641 establishments were subject to Improvement Notices, by 1996 this total had fallen by 90 per cent to 4,158, according to the Chartered Institute of Environmental Health.

3.4 It was reported in Environmental Health News on 19 September, 1997 that Food Minister Jeff Rooker, speaking at the Chartered Institute of Environmental Health Congress in Bournemouth, told delegates that the Government want to see effective formal action by enivronmental health departments, and a common level of enforcement across the country. However the Minister also emphasised that environmental health departments were not at war with food businesses and that they should continue to provide education and advice to them.

4. DEVELOPING AN APPROACH BASED ON QUALITY

4.1 According to Professor Wheelock (1992) the United Kingdom food industry needs to place a greater emphasis on genuine quality. This would have the effect of increasing public confidence. The quality of any service is led by the consumer. For the caterer and the food retail sector their customers are experiencing a total package: the food; the service; the hygiene; the premises; and so on. Customer evaluation will be continuing throughout the visit. An extremely useful definition of quality and service was produced by Zeithaml et al (1990): "The extent of discrepancy between customers' expectations or desires and their perceptions". This can be simplified to how you think it should be versus how it is.

4.2 Despite all the information on quality and the importance of marketing, research undertaken by Guerrier et al (1992) concluded that management in the catering industry deemed food hygiene significant only when something goes wrong. It is not considered as making a positive contribution towards quality and is unlikely to be viewed in the same terms as other variables, the researchers reported. This perception needs to be changed.

5. THE RESEARCH STUDY

5.1 As an Environmental Health Officer involved with food safety enforcement and education, I am undertaking research with the University of Brighton as part of a Doctoral study. Using primarily qualitative research methods I aim to identify factors or clues which the public use to assess the standards of food hygiene in a public eating place. These will be compared with the factors or clues which a sample of professionals with an interest in food hygiene consider the public should find important. The professionals include environmental health enforcement staff and caterers with a high level of qualification in food hygiene.

5.2 From the data obtained the key factors will be drawn out and converted into a series of checklists. These could have two main purposes. Firstly the clues highlighted by the professionals could be used to inform the general public about what they should be looking for in public eating places to provide vital clues as to the standards of food hygiene in those premises. Secondly, both sets of clues from the public and professionals, could be used to encourage the food trade to adopt the standards, knowing that they will be satisfying their customers and thereby delivering a higher quality service.

6. RECOMMENDATIONS

6.1 The food retail sector and the catering trade need to be convinced that high standards of food hygiene make for good business sense and will provide commercial spin-offs.

6.2 The food retail sector and the catering trade needs to recognise that food hygiene is an important part of delivering a quality service to the customer and that a greater emphasis needs to be placed on genuine quality.

6.3 The food retail sector and the catering industry needs to be informed about what clues the public are looking at to assess a businesses' standards of food hygiene and cleanliness. Results from research already indicate that these standards are beyond the basic standards required by law.

6.4 A firm but fair and open policy on enforcement of the law should be adopted by local authority environmental health departments and this should be meshed together with an approach based on education and advice.

6.5 A programme of education and information should be constructed to inform the general public about what they should be looking for to assess the standards of food hygiene in any food business, thus empowering them to make informed decisions about where they choose to shop and eat.

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29 September 1997

APPENDIX 8

Memorandum submitted by the Institute of Food Science and Technology (C8)

INTRODUCTION

The Institute of Food Science and Technology is by its nature, composition and responsibilities the largest UK food science related public interest group, being the professional body for food science and technology. It is entirely independent and possesses a collected expertise in every aspect of food safety. We were pleased to receive an invitation to our President to submit evidence to the Agriculture Committee's inquiry. Many of the points made in our submission have already been published in our responses to the Pennington Report, the Report by Professor James concerning a new Food Standards Agency and the EU Commission Green Paper on Food Law. We would be willing to give oral evidence if requested by the Committee.

1. EFFECTIVENESS OF THE SYSTEM IN INVESTIGATING AND NOTIFYING CASES OF FOOD-POISONING

In relation to the investigation and reporting of food poisoning the important role of the Public Health Laboratory Service (PHLS) needs to be recognised. The PHLS provides research services that are unequalled in Europe and the rest of the world. For many years excellent research has been done on the properties of verocytotoxigenic *Escherichia coli* (VTEC) which has put the UK at the forefront of research on these bacteria. Further research is needed on improved methods for detection of VTEC, on the proportion of these organisms that are pathogenic in humans and on the ecology of these bacteria in food animals and other animals. Increased research is also needed on foodborne and waterborne viruses and protozoa. There is an urgent need to increase the support, financial and otherwise, for this Service.

A major deficiency mentioned in the Pennington Report was the inability to track contaminated product through the distribution chain to the end consumer. Lot traceability is an essential requirement for an accredited Quality Assurance system. This requirement must be applied to all food processors large or small, a point we cover later under licensing of food businesses.

2. SIGNIFICANT GAPS IN UNDERSTANDING AND MEASURES TO REDUCE THESE

Whilst it is important to recognise real safety problems and continue to address them by research we believe the major requirement for reducing the incidence of food poisoning is the dissemination of the large amount of scientific information on food safety that is available and the effective application and management of the knowledge by all in food manufacturing including large, medium and small enterprises, caterers and the public.

IFST regularly publishes Position Statements on current topics. Recent publications include BSE, Food Safety and Cheese, Cryptosporidium, and Foodborne Viral Infections. In course of preparation are reviews of Mycobacterium Paratuberculosis, Salmonella DT104, VTEC and Cyclospora.

3. THE LEVEL OF FOOD SAFETY RISK IN THE FOOD CHAIN

In responding to the EU Green Paper on Food Law we welcomed the clear recognition that risk assessment requires the expertise and judgement of scientific advisory bodies working in a transparent way. In an advisory role these bodies should indicate the level of risk reduction achievable through the application of recommended processing procedures and measures especially in relation to new types of foods and pathogens. In looking at risk management we must not only recognise the responsibility of the main

Regulatory Bodies, but also look to the responsible food companies who have much to offer through their quality control procedures. However it is very important to avoid interpreting "Food Safety" as requiring zero risk. New research on any food topic may bring new knowledge and the application requires both the disciplines of risk analysis and risk management. Finally because of the scientific uncertainties in risk assessment it is vital that it is applied with commonsense and communicated to the consumer in such a way that avoids the speculation and concerns associated with food scares.

A major part of microbiological safety of food rests with ordinary individuals whether as agricultural workers, food handlers (and those who take decisions about food handling) in manufacture, distribution and retailing; and consumers both in purchasing and in the home. We believe that any new Food Agency must address the need for food hygiene education and training and consider four essential components:

(i) An extensive and continuous programme of public education and advice on food hygiene.

(ii) Food hygiene teaching in teacher-training colleges and schools at both primary and secondary level.

(iii) Mandatory food hygiene training for food handlers (and more advanced training, including in Hazard Analysis and Critical Control Points (HACCP), for those who take decisions about food handling) in all food businesses. (We believe this requirement is inadequately covered in the provisions under the Food Safety (General Food Hygiene) Regulations 1995.)

(iv) Licensing of all food businesses—with the licence dependent on both hygienically satisfactory premises and demonstrated food safety knowledge by the proprietor or the responsible person in the business (we refer to this point again later).

(a) *The farm, crops and animals, transit and slaughter, primary processing of crops*

We support the "stable to table" concept and application of product liability to primary agricultural production for defective products. This requires acceptance that modern agriculture is just another link in the food chain and should be subjected to the same constraints. It is important to recognise the extent to which food safety can be compromised by practices in agricultural and animal husbandry sectors. In particular we believe the safety of food can be put at risk by:

(i) the disposal of human and animal wastes (sewage sludge, farmyard wastes) on land to be used for vegetable and fruit crops and on grazing land and by the recycling of materials such as poultry waste for subsequent use in animal feed. These factors if not properly controlled can result in the spread of microorganisms such as *Salmonella* spp, *Escherichia coli* 0157, viruses such as hepatitis A and protozoa such as *Cryptosporidium* and *Cyclospora* to food animals and food crops and the contamination of surface water and water used for irrigation. These risks are not easy to control and we believe there is an urgent need for an overview of this subject throughout Europe which should form the first stage in the application of HACCP to the production of safe food.

(ii) the feeding of antibiotics to food animals for reasons other than treatment of disease in animals which is liable to increase the prevalence of antibiotic-resistant strains of foodborne pathogenic bacteria.

(iii) feeding of animal waste to animals eg poultry waste to poultry.

(iv) the unknown extent to which farming practices (including livestock agriculture, horticulture and fish farming) employ the prophylactic use of antibiotics which may increase the general level of antibiotic-resistant strains of bacteria including foodborne pathogens.

As a result of the BSE crisis we have been pleased to see that in slaughter houses and primary cutting plants the application of HACCP together with rigorous enforcement of procedures has resulted in significant reduction in the number of out-of-standard incidents. The same rigour needs to be applied to all such primary operations including the farm washing and preparation of fruits and vegetables.

(b) *The food processing, food retail and catering industries*

In the food processing and catering industries there is a prime need for licensing, as distinct from registration, of all food businesses backed by an enforcement agency with an effectively delegated authority to license food premises and operations.

The development of guides to good hygienic practice throughout the food chain is necessary. Specific hazards such as *Ecoli* 0157 should be addressed in each sectoral guide and be backed by enforcing the HACCP requirements of the Food Hygiene Regulations. Any new provisions must be backed by a rigorous surveillance and inspection regime and detailed review is needed as to whether or not the inspection authorities have the necessary trained staff and resources to do the job. In this regard special mention must be made of the major food manufacturers (and also retailers with their major suppliers) who have developed their own Quality Assurance systems (many are certified under BS 5750), trained and certificated their staff and apply HACCP extensively and with rigour. Much mention is made of HACCP and application to small and medium companies (cf the Pennington report) but HACCP is a demanding technique requiring rigorous application by well-trained people. It can be said that an inadequate HACCP study can be more dangerous if applied than not doing the study at all. As we are dealing with the practical application of knowledge to ensure effective quality control we must not overlook the need to involve institutions such as IFST and experts within the food industry who are dealing with these matters on a day-to-day basis and have a vast body of knowledge and experience.

(c) *Domestic households and labelling advice*

In recent years there has been a trend to market foods which have a greater inherent risk of microbiological safety due to reduced use of additives, including preservatives or presentation as semi-preserved, chilled and fresh foods. Such foods usually have a reduced shelf-life and certainly need to be handled with care throughout the distribution chain. This change must be understood by the consumer who has been traditionally used to heat-preserved canned foods and deep frozen foods which are intrinsically "safe". IFST has supported many initiatives by retailers and industry associations such as the Food and Drink Federation (FDF) annual Foodlink campaign. As we seek greater transparency in food safety matters, it is essential that information is provided to consumers who in turn are able to understand and properly use the information for their benefit.

Too often the interpretation is left to others who are more intent on dealing with sensation rather than the correct presentation of scientific knowledge. We would wish to see any new Agency putting communication to the consumer, together with educative information, high on the agenda for action.

With regard to labelling, the food label is of finite dimensions so that what must be included needs to be kept to a minimum having regard to (a) the essential needs of consumers (b) the provision of meaningful information and (c) the increasing use of multilingual labels to permit sale in all EU Member States.

Where information may be desirable rather than essential eg animal welfare, use of safe novel food processing and "green" labelling, it should be left open to voluntary provision with other means such as point-of-sale material used to provide the information. Before any further labelling controls are considered, research into consumers' understanding of labelling terms should be evaluated and detailed requirements reviewed in the light of conclusions reached. It may be that research reveals a need for public education programmes to assist understanding of food labels. The label itself should not be regarded as an educational instrument.

The problems posed by food allergens (as distinct from other adverse reactions to food) is complex. Special labelling is required but should not relieve sufferers or their medical advisers from the responsibilities of identifying individual susceptibilities. Nor should labelling relieve manufacturers from the duty of care and due diligence in preventing adventitious cross-contamination during manufacturing. From the viewpoint of food safety there is a clear need to provide some kind of label warning. This is being given as a voluntary warning by some manufacturers in the case of certain "major" allergens but there is a case for standardisation of such warnings through regulation.

Our Position Statement on Food Allergens is appended [not printed].

4. BIOTECHNOLOGY

This is a subject of considerable concern to consumers. Such concerns usually divide into those shared by responsible scientists, and those which arise from lack of understanding and fear of the unknown. The public needs to see that the problems in the former group are addressed as effectively as possible through action by any future Agency, by scientists and by all in the industry. Problems in the latter group are just as important but require to be dealt with in a different way, presenting a formidable educative task to which we have referred earlier.

We are sure there needs to be a perceived consumer benefit for there to be acceptance of a particular genetically modified food. In a wider sense we need to understand, and to help the public understand, that feeding the world's exponentially growing population will require, in addition to whatever may be achieved by improvements in population control, more rational distribution of food supplies from conventional agriculture together with a whole armoury of genetically modified materials. Public understanding and acceptance of genetic modification is equally essential for there to be beneficial advances in medicine. Scientists recognise these serious concerns and problems which are listed in the IFST Position Statement on Genetic Modification and Food. (Appendix 2 [not printed].)

IFST has recently published a "Guide to Food Biotechnology" which was sponsored by the DTI's BMB initiative. Food Safety is covered in a chapter on Regulatory Status and Labelling Requirements which describes the UK voluntary system based on requesting approval to market novel foods prepared by novel processes (including genetic modification).

The methods used by the Advisory Committee on Novel Foods and Processes (ACNFP) are appropriate to determine whether or not the process or food is safe. Regulations in most countries including the UK are based on the concept of substantial equivalence. Thus safety is established by determining if a novel food is substantially equivalent to an analogous conventional food product in terms of composition, properties, the amount consumed, the type of processing that the food might undergo and consumption by particular groups in society (eg infants and elderly).

Totally new foods such as the mycoprotein Quorn which have never been consumed by man before must be evaluated on the basis of extensive compositional and toxicological trials. Other concerns have related to the release of GMO's to the environment. This was specifically addressed in the UK by the 1989 Royal Commission on Environmental Pollution (RCEP). Since then all potential releases must be scrutinised by the Advisory Committee on Releases to the Environment (ACRE) which was established following the RCEP Report. The EU has now reached agreement on a new Regulation on Novel Foods and Food Ingredients which includes those genetically modified. In all we are encouraged that in ensuring safety the Regulators have been conscious of the need to reduce bureaucracy and reduce waiting times. We support the establishment of an effective regulatory system which serves to reassure the public that they are not being exposed to unassessed and unacceptable risks.

Labelling of GM products in the UK has been done to date on a voluntary basis but is to be mandatory under the new EU Regulations except for food prepared from plants which have been genetically modified for agronomic traits. Whatever the merits of the scientific case many consumers have demanded labelling for all cases on the basis of a "right to know" (which implies complete segregation from field to factory). Although a short-term strategy to communicate with adult consumers unfamiliar with biotechnology is necessary, education of the next generation is equally important and likely to be more effective in the long-term. Biotechnology probably represents one of the most fundamental changes we will see in food production as we approach the millennium and the future availability of such foods will only be achieved if the benefits are clearly perceived by the consumer.

29 September 1997

APPENDIX 9

Memorandum submitted by the Farm and Food Society (C9)

COMMENTS ON RECENT TRENDS IN THE INCIDENCE OF BACTERIAL FOOD POISONING IN THE UK, AND THE EFFECTIVENESS OF THE SYSTEM OF NOTIFYING CASES OF FOOD POISONING

The Swann Report of 1996[1] recognised that the increase in bacterial food poisoning had coincided with the growth of intensive livestock production and its use of antibiotics both for prophylaxis and in animal feed. The incidence of *salmonella typhimurium* had risen from 3 per cent in 1962 (when the first resistance transfer was identified) to 61 per cent in 1993–94; and resistance factors were now widespread throughout the world. At a World Health Organisation international meeting in London in May 1997, Professor Duerden (deputy director of the Public Health Laboratory Service) repeated that prophylactic and widespread use of antibiotics in animals would inevitably create a pressure on the bacteria in those animals and select out resistant organisms. At the meeting new evidence from Japan was discussed showing that aggressive pathogenic bacteria were acquiring resistance to methricillin and vancomycin and that resistant bacteria moved rapidly between human populations.

At the 1997 BVA Veterinary Public Health Association meeting at Hinchley, Aase Tronstad quoted evidence of cross-resistance and the spread of such bacteria from animals to man. (Since the cessation in the routine use of antibiotics in Sweden there has been a significant decrease in the incidence of antibiotic-resistant organisms compared with that in other countries).

An Abstract from a paper on the *Impact of Antibiotic Use in Animal Feeding on Resistance of Bacterial Pathogens in Humans,* 1997[2] reported the spread of *sat* genes which confer resistance to an antibiotic which has only been used in animal feeding, and were later found in *Ecoli* from human infections, having spread in the absence of selection pressure.

The Swann Report had warned about the dangers of *Ecoli*:

> "Although such organisms as *Escherichia coli* may be incapable of causing disease in adult humans, they may nevertheless be resistant to antibiotics. In the human intestine this resistance may be transferred to strains of bacteria which are normal inhabitants of the human bowel and could conceivably be transferred either directly or indirectly to such highly dangerous organisms as the typhoid bacillus (*salmonella typhimiurium*). Such a chance meeting between resistant organisms and highly dangerous (pathogenic) ones could give rise to a potentially explosive situation."

The explosive situation appears to be upon us, either from transferable resistance from *Ecoli* to *salm typhi* or vice versa.

Evidence has shown that a comparison of antimicrobial resistance surveys in Finland and Denmark in 1995–96 showed that in Denmark where tylosin is commonly used, with total use 30 times greater than in Finland, tylosin resistance in swine enterococci is 90–91 per cent against only 15 per cent in Finland. In spiramycin the incidence of resistance enterococci in pigs is 88–89 per cent in Denmark as against 12–15 per cent in Sweden.[3]

The Guardian of 24 May 1997 quoted microbiologists as reporting that some strains of bacteria were now immune to 99 out of 100 antibiotics in the world. If the last effective antibiotic—vancomycin—became overwhelmed by resistant strains, certain operations might become impossible.

In addition to recommending a reduction in the routine use of antibiotics in livestock, Swann urged that "experimental research be initiated into the effectiveness, feasibility and economic consequences of deliberate changes in animal husbandry introduced in the light of epidemiological knowledge."

> The implementation of this recommendation in even stronger terms has become vital to human health.

The Times of 9 June 1997 reported that campylobacter began to overtake salmonella in the late 1980s as the biggest bacterial cause of diarrhoea, and last year accounted for 51 per cent of the total food poisoning cases. Although salmonella in poultry has been reduced, one in three broiler chickens are still infected. Professor Hugh Pennington is quoted in *The Times* of 29 September as expressing his belief that up to 500,000 people are poisoned by campylobacter through chickens each year and that 25 million birds in the national flock of about 76 million are contaminated.

A recent *Public Interest Report on Ecoli* showed that the stated objectives of food safety policy had not been fulfilled and that no system of accountability and redress was provided.[4]

In January 1995 *Poultry World* reported that David Parsons, a poultry specialist, after a tour studying poultry diseases in the EU, had decided that instead of the problem of food poisoning being tackled by a campaign extending from the primary breeder to the supermarket, involving the service industries on the way, "we have a collection of fragmented industries that lacks the essential will to win, and human and animal health departments in conflict when they should be working together." Mr Parsons considered directives, national legislation and codes of practice as means of passing the buck: "instead of solving the problem, such measures dilute the effort required and send people in search of ways round the rules."

ON FARM

The Times of 9 June reported David Statham, Chairman of the Chartered Institute of Environmental Health's Food Committee, as saying "We felt there was too much focus on the failings of the consumer, and not enough on the need for an industry to clean up its act right across the board, from the farm, through slaughterhouses and processing plants to the retailer".

On *Farming Today* on 8 August 1997 Professor Stephen Hill of Bristol University referred to a study in Ireland showing that the more intensively a farm is managed the higher the risk that cows will go down with TB. A colleague had found that cattle kept in high stocking densities and competing for pasture meant that lower ranking cows were more likely to go and graze pasture contaminated with urine and faeces which they would tend to avoid if they could. If cows were put back on the field too soon after silage cuts they would graze around the bottoms of hedgerows where badgers do most of their urination and defaecation. He added that organic farmers had a much lower risk of getting TB than intensive farmers.

The terms of reference of this Society concern the wholesomeness of food as it leaves the farm, and we consider this of primary importance as, vital as safety in other aspects of food production is, if animals are infected on the farm, in transit or at slaughter, no amount of subsequent hygiene solves the problem. Intensive livestock units are not only sources of infection but, in the build-up of slurry and its disposal on land, present environmental health hazards. Stock reared intensively, especially when treated with artificial growth-promoters, is weaker and more vulnerable than stock reared naturally, but even extensive systems can overstock, leading to overgrazing and reducing animals' natural immunity.

A similar picture appears with intensive cultivation, which renders crops treated with artificial fertilisers and pesticides weaker than organic crops.

Nothing short of a reappraisal of our agricultural system and its conversion to more extensive systems, with an embargo on artificial growth-promoters and prophylactic drugs (except in the case of an epidemic) is likely to be effective. The demand for organic produce is an indication of the public distrust of pesticides, which is doubtless well-founded.

IN TRANSIT

Transport of valuable animals, eg for breeding or exhibition, is generally acceptable as they travel in specially designed vehicles and are provided with care and conditions guaranteed to retain their value. This does not apply to slaughter stock, which goes through markets, sometimes remaining overnight, is usually overcrowded and mixed with strange companions, often incurring long journeys. Fear and stress make animals more susceptible to pathogens. Particularly vulnerable are those taken from the hills, where they have led a virtually wild life, and are suddenly rounded up, driven to markets, reloaded and then subjected to a further journey for slaughter. Numbers are so great that any individual care is out of the question. In August 1997 35,000 lambs were auctioned at Lairg in the North of Scotland in very high temperatures. A haulier commented that new EU transport regulations were in force, by which lambs could be sent on a 15-hour journey, provided the wagons were fitted with drinkers. If they stayed overnight at the market they could travel for 14 hours and after watering, go on for another 14 hours.[5] These new regulations require animals to be unloaded and "rested" after 14 hours, but this can increase the stress and expose them to infection. The industry has appealed for breeding stock to be exempted from this rule for this reason, highlighting the difference between transport conditions for breeding and slaughter stock. It is obviously, from a hygenic and humanitarian standpoint, better to slaughter animals as near as possible to farm of origin, as advocated by welfare groups and the British Veterinary Association, and to avoid markets for slaughter animals.

AT SLAUGHTER

MAFF's new regulations concerning hygiene at slaughterhouses would be more effective if they were accompanied by an increase in these to avoid animals being sent on long journeys, when fear and stress can create diarrhoea, which contaminates them and may result in refusal of admittance, leading to a further long journey. The closures of so many small abattoirs, which may have been necessary in some cases, has created a situation where both animals and farmers are worse off. More and smaller abattoirs are highly desirable. Where appropriate, encouragement of the use of the mobile slaughterhouse, pioneered by the Humane Slaughter Association, would be valuable, facilitating slaughter on or near the farm where smaller numbers of animals are involved.

FAWC has made a very useful report on red meat slaughter, including the question of noise, which is frightening for the animals and stressful for the operators. The aim should be short journeys, quick despatch, scrupulous hygiene and avoidance of noise as far as possible.

Food Safety Implications of the Presence of Genetically Modified Organisms in the human food chain and the desirability and feasibility of labelling foodstuffs containing genetically modified organisms

In addition to the obvious risks of GMOs resistant to certain herbicides, which may increase their use, and antibiotic markers, there are unknown hazards in introducing these organisms into the environment, from which they cannot be recalled. The question needs to be asked (and answered): Do we need GMOs? We are told that in a few years all our food will contain them. In developed countries where surplus food and obesity are already problems, are we justified in introducing such a revolution?

Dr Andrew Watterson, Director, Centre for Occupational and Environmental Health, de Montford University, in a letter to the *Independent* on 3 December 1996, said the soya bean story "may produce the worst outcome for consumers, production workers and the environment—a genetically engineered plant, and continued and significant pesticide usage: double jeopardy."

On 4 December, the *Independent* published a further letter, signed by P H White, pointing out that genetic engineering does not have the precision that its name implies:

> "It is not possible to predict the full biochemical consequences of the interaction of a gene from a completely unrelated organism within its new plant hosts. Scientists in the biotechnology industry appear to be ignoring fundamental principles of molecular genetics and the limitations of the technology as they try to meet technical and commercial objectives. Current voluntary guidelines only require testing for known toxins, ignoring the possibility of the creation of new unexpected substances."

In a letter to *The Times* of 24 January 1997 Malcolm C Walker, Chairman and Chief Executive of the Iceland Group plc, said: " . . . we are corrupting nature and we have sufficient evidence to show that nature fights back—salmonella, listeria, BSE . . . Natural and genetically modified foods must in the future be separated at source, processed, transported and utilised in food manufacturing accordingly. Government action is needed on two counts: we must know the source of products and labelling must be mandatory. By genetically modifying foods we are messing with the building blocks of life."

Professor James has been sent a comprehensive document on Bovine Somatotropin prepared by our Chairman, John Verrall. A further copy can be sent on request.

HEALTH, SAFETY AND BUSINESS

We were particularly impressed by the statement in the James Report: "What is needed is a new body which separates the role of protecting public health and safety from that of promoting business."

Even the Swann Report referred to above, while facing up to the dangers of administering in-feed antibiotics to livestock, recommended that:

> "permission to supply and use drugs without prescription in animal feed should be restricted to antibiotics which (a) are of economic value in livestock production . . ." (*Swann,* 12.12.)

Although Swann clearly acknowledged the need for "deliberate changes in animal husbandry" the Report was careful to recommend research into "the economic consequences of this." Again,

> "We suggest that there is a need for research into the consequences, including the economic consequences, of influencing the bacterial environment by higher standards of hygiene and other means." (*Swann* 12.35)

The consequences of giving priority to economic considerations have been so devastating to both livestock and human health that it would be both foolish and shameful to allow this to continue.

More recently, events leading up to the BSE crisis were, according to an investigation by Dr Jean Shaoul,[6] "because of the British Government's deregulation of the food industry and encouragement of private profit at the expense of public health." A further investigation into the *Ecoli* 0157 outbreak, finds that it "was not an accident in the sense that it was without cause, unintentional or unexpected. Its origins and spread were a consequence of the drive to lower costs and maximise profits. Regulations were introduced and standards were enforced in order to reduce the cost to business."[7] We are therefore concerned that the Country Landowners Association told Dr Jack Cunningham that "the Food Standards Agency should be located within the Department of Trade and Industry" (*Farmers Weekly* 20.6.97). Just as the Ministry of Agriculture, Fisheries and Food has so far been strongly influenced by economic pressures of farming and associated interests, the DTI has its slogan: "Biotechnology Means Business" which indicates that neither of these Departments has had the interests of consumers at heart.

Sweden has led the way by banning in-feed antibiotics in its pig industry. This created an uproar by vets, and initially more disease, but improved conditions have now resulted in an industry free from use of antibiotics except for therapeutic purposes and a marked decrease in the incidence of antibiotic resistance.

October 1997

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APPENDIX 10

Memorandum submitted by the Food Safety Advisory Centre (C10)

Further to your letter dated 30 July 1997, I write to make my submission on behalf of the Food Safety Advisory Centre to the House of Commons Agriculture Committee on Food Safety.

The Committee may know that the Food Safety Advisory Centre (FSAC) was established in late 1989 at the time of Mrs Currie's comments about Salmonella in the UK chicken flock.

We brought scientists, doctors, consumers and environmental health specialists together to provide scientific information to the consumer who, as you know, was confused and uncertain about many aspects of food safety. The six major food retailers funded our work. We produced leaflets, two books, a free consumer foodline, funded blue sky research, produced codes of practice for the retail sector, and built a credible relationship with the consumer using these tools together with a programme with the electronic media.

The Food Standards Agency report written by Professor Philip James, was comprehensive but lacked the communication dimension which is vital if consumers are to enjoy a relationship with the proposed food agency. Our experience shows that merely putting out statements, circulars etc. is insufficient to forge a relationship of trust. Telephonic, visual contact and appearance by the Chief Executive Officer (CEO) of the agency is fundamentally important. The most important part of my own role, as Director of the Food Safety Advisory Centre was my ability to talk to the consumer via the telephone or through regular radio and TV programmes as well as through my comprehensive speaking round.

The CEO does not need to be a pure scientist but must enjoy the back-up of a reputable scientific team. His job should be to manage the total process and communicate with the Public.

— With regard to the questions raised by the Agricultural Committee, the Food Safety Advisory Centre is concerned that the incidence of reported cases of bacterial food poisoning in the UK has increased almost five-fold over the past decade, although many authorities believe that only one in thirty cases are reported. In addition, even in samples submitted for testing to Public Health Laboratories as a result of suspected food borne illness the agents responsible are detected in only approximately 10 per cent of cases.

- Although the hazard analysis critical control point concept (as recommended by the Richmond and Pennington Committee) is being introduced at all stages of food production and processing, many small manufacturing establishments are finding the introduction difficult, there are still problems in cross contamination, particularly where foods of animal origin are concerned.

- The Food Safety Advisory Centre has funded studies which have shown for example, that although there were poultry flocks in which no Salmonella was detected in a sample of 50 birds at slaughter, the incidence had risen to a carriage rate of one bird in four at the time of packaging and the giblets has an even higher carriage rate. It would appear therefore, that large scale slaughtering appears to be a bigger problem than factory farming in encouraging cross contamination. It is clear therefore that there is a need for a better understanding of the factors which allows agents of food borne illness to attach to surfaces, to resist cleaning and disinfection and to move from site to site within food processing and production plants and from such sites to the food itself. There is, for example, published evidence that non-pathogenic bacteria assist in the attachment of pathogens to surfaces and this leads to the formation of biofilms which are more difficult to remove. The increase in pathogens in animals during transportation is also of concern and better understanding of the design of slaughterhouses and of transportation systems is required.

- Repeated research has regularly demonstrated that mistakes during catering and also in homes are responsible for the majority of reported outbreaks of food borne illness. Better education both in schools and throughout the catering industry is urgently needed. However, research is also urgently needed on the most cost effective means of education and on the sources which are most effective in providing information to the general public.

- There is also a need to provide a level of expertise within the United Kingdom in the scientific study of agents of food borne illness. There is evidence of workers with insufficient expertise and knowledge at all levels in isolating, identifying, characterising and understanding agents of food borne illness. The agricultural and food industries are changing rapidly and there is compelling evidence and the changes are allowing or even encouraging changes in the microbial populations. For example, it is believed that changes in agricultural practices and increased use of refrigeration have led to increasing levels of Listeria monocytogenes in food manufacturing and processing sites and this in turn has led to increased levels of the organism in food. In addition, increased use of anti-biotics has encouraged the development of a multiply antibiotic resistant strain of Salmonella typhimurium while the appearance of a strain of Salmonella enteritidis able to infect and grow within eggs has led to a situation which the catering industry and those cooking at home have to come to terms within over a ten year period. The most recent appearances (of verocytogenic Escherichia coli and the new variant of CJD) suggest that evolutionary changes within natural populations are always likely to occur and that a level of expertise needs to be maintained in order to detect and control the problems which arise from changes at the earliest possible moments.

- The likelihood that the microbial flora of the gut is important in the long term health of the individual is also now generally accepted. There is an increasing possibility however that food borne illness perturb the delicate microbial balance within the gut and lead to deleterious changes. Research is urgently needed to understand the microbial interaction involved.

- Discussions with consumer organisations and meetings with the general public, as well as research carried out in association with the Food Safety Advisory Centre have shown that there is considerable concern that food containing genetically engineered organisams should be labelled in order to allow choice. There is a clear need for more information on genetic modification to be given methods of transmitting this information together with an understanding of how the news media deal with such information needs to be developed.

- Finally licensing of catering establishments, butchers and shops with increased funding for Environmental Health officers and a requirement of training of all food handlers, including those working in the catering industry.

Overall, the consumer must receive and believe that he or she is receiving best scientific information against which decisions can be made. This presupposes the development of a relationship with the new agency and this in turn, suggests a visible individual to cultivate the relationship and provide the levels of comfort and discipline which both consumer and producer require.

The Food Safety Advisory Centre has demonstrated this need and has shown how the need can be met. I hope that this is helpful to the Committee and should any points be raised with regard to our submission please do not hesitate to contact me.

6 October 1997

APPENDIX 11

Memorandum submitted by the Food Advisory Committee (C11)

Thank you for your letter of 30 July and for the opportunity to contribute to the work of the Select Committee in its inquiry into Food Safety. As you will be aware, the Food Advisory Committee (FAC) is an independent non-statutory, non-executive public body which provides advice to government Ministers on a wide range of food issues, including food labelling, food composition and food chemical safety. Many areas of food control are now governed from Brussels, and the FAC frequently provides advice to officials and Ministers to assist them during negotiations. In addition, the FAC has recently been given a new, wide-ranging role in the run-up to the establishment of the Food Standards Agency and will deal with any cross-cutting issues which go beyond the remit of any one of the other advisory committees.

The membership of the FAC is designed to ensure that it has as wide a range of expertise and opinions available to it as possible. It is not a technical Committee, although many of its members do have technical backgrounds. The FAC regularly takes advice from other expert committees and, taking account of consumer perceptions and interests offers practical advice on food safety issues. For example, where there is a concern about the chemical safety of food, the Committee will examine advice from the Committee on Toxicity of Chemicals in Food, Consumer Products and the Environment (COT), whose Chairman also sits on the FAC, before issuing advice on action proportionate to the risk involved. All the members are appointed in their own right for the knowledge and experience that they can bring to discussions, and not as representatives of companies or organisations. The background of the 15 members (including myself as Chairman) represents a balance where no interest or group of interests predominates. Non-industry views are expressed not only by the members with particular consumer affiliation connections, but also by the members who are lay people or whose background is in enforcement or academic research. We are, in one sense, all consumers.

In addition to the views expressed by its members, the FAC is able to take account of the opinions held by the public in two ways. First, major reviews, such as the Committee's discussion on functional foods and health claims, usually involve a formal consultation period when written comments are invited from a wide range of interested parties, including consumer organisations. These consultations are designed to provide enough time for organisations to consult their members before replying. Second, the agenda for each FAC meeting is published about two weeks in advance in the form of a Press Release which is sent to a wide range of contacts, including the Food Commission and other consumer groups. This provides an opportunity for written comments to be sent to the Committee so that particular views can be included in the discussion. The results of these discussions are then summarised in a further Press Release issued shortly after each meeting. Consideration is currently being given to ways of increasing the public profile and accessibility of the Committee still further, and I hope to see these measures put in place shortly.

Looking at the particular concerns which the Select Committee has identified at the outset of its inquiry, it seems that most of these relate to food hygiene and microbiological safety. Since detailed consideration of these issues fall to the Advisory Committee on the Microbiological Safety of Food (ACMSF), I believe that it might be more appropriate for the Chairman of that Committee to comment in the first instance. However, the final point which you have listed relates to foods containing genetically modified organisms. Safety of these foods is a matter for the Advisory Committee on Novel Foods and Processes (ACNFP). The labelling of such foods is a matter for my Committee and it has considered labelling issues in depth in recent years.

The FAC's role in relation to foods produced using genetic modification technology is to advise on the need for special labelling. Prior to the recent introduction of the EU novel foods regulation, we were asked to consider individual products on a case-by-case basis once the ACNFP had been satisfied as to their safety. Our recommendations on labelling then formed part of the advice to Ministers.

Until recently we operated under our own guidelines. These identified conditions under which we believed that labelling was essential. We identified at an early stage that there is a clear case for mandatory labelling where purchasers need to be fully aware of changes in composition which might have implications for certain consumers, either in terms of health effects or ethical acceptability. Where mandatory labelling did not seem to be justified we recommended that manufacturers and retailers should provide additional (voluntary) information about GM products. In some cases this might be done through labelling—such as the paste made from GM tomatoes which is available in some supermarket chains. In others, labelling might be less appropriate, in which case the information could be provided in other ways, such as posters, leaflets, telephone information lines etc. in these cases we considered that manufacturers and retailers were in the best position to determine the form in which information would be most useful to their customers.

In all of the above, there is a distinction to be drawn between foods or food ingredients which contain genetically modified material and food ingredients which are derived from GMOs. In the former situation there is clearly a case for labelling but in the latter, for example with a highly-refined vegetable oil, labelling would be meaningless as the final product contains no genetic or proteinacious material, and is indistinguishable from that obtained from a conventional source. To insist on labelling foods containing such products would merely be confusing to the consumer.

Your Press Release makes specific mention of the feasibility of labelling GM products. This is a difficult area, since there are many instances where it would be exceedingly bureaucratic, if not impossible, to trace every ingredient which might end up in very small quantities in a compound food. An added complication has been the decision by some growers and processors of GM crops to mix them together with the conventional varieties, either on the farm or at the processing stage. In these instances it would require a very high level of analytical ability to determine whether any given batch of a food ingredient was derived from the GM or non-GM source, or from a mixture of the two.

In recent months the FAC's guidelines have been overtaken by the labelling criteria which are set out in the EU novel foods regulation. Although the detail of how these will be applied in practice has still to be decided in Brussels they would not appear to be significantly different to the criteria that we have applied to date. I understand that further proposals on labelling are expected from Brussels shortly. My Committee will be kept informed of developments and provide advice as necessary.

I hope these comments are useful to the Select Committee in its enquiry. If you require anything further, I will be happy to help.

9 October 1997

APPENDIX 12

Memorandum submitted by the British Medical Association (BMA) (C12)

GENERAL POINTS

The BMA is keen to emphasise the importance of nutrition in relation to food policy. Although the consultation refers to food safety, it is not just safety that is important in terms of health. Many major causes of morbidity and mortality are related to poor diet and we would hope that within government structures nutrition is given equal status to food safety. In this way safety will be guarded whilst also promoting health and preventing disease.

There is undoubtedly a need for a thorough review of food safety legislation. Much legislation has been put in place in relation to European Directives and to food scares within the UK. It needs to be ensured that the legislation is effective and that there is clear guidance for industry and the consumer on the legislation, along with sufficient funds for inspection and monitoring.

Consumers need to be confident that foodstuffs purchased have been produced to the highest standards, contain no harmful additives or toxic contaminants and are stored correctly prior to consumption. The precautionary principle should apply in terms of food safety when the available scientific evidence does not enable a clear decision to be made about potential risks. In addition, no new substance or process should be permitted in food production unless it can satisfy four criteria; safety, efficacy, quality and social need. The fourth criteria (sometimes referred to as "the fourth hurdle") is critical in ensuring that substances and processes which damage, for example, animal welfare, do not reach the market. Acceptance of the fourth hurdle would need to be pursued at both EU and international level. Those substances and processes already in use should be systematically reviewed and those which do not meet all four critieria should be prohibited. Examples could include routine use of antibiotics in animal and fish farming and a number of additives used in processed foods. All stages of the food production process need to be considered in relation to food safety including methods of food preservation.

FOOD BORNE INFECTIONS

Notification Systems

It is important to distinguish between "bacterial food poisoning" where an organism is isolated from a food stuff or affected patient and "food poisoning" which is a clinical diagnosis where the causative organism may well be unknown. The former may be ascertained from laboratory reports; the latter from notifications by medical practitioners. The notification system for cases of food poisoning is notoriously unreliable. For it to operate effectively, all patients who develop food poisoning symptoms would need to visit their GPs and these GPs would need to complete a notification form on every single one of these patients. In an ideal world, each of these patients would also submit a stool specimen for laboratory analysis.

What happens in practice is that a variable proportion of patients with food poisoning symptoms consult their GP. The proportion who see the GP may be affected by the severity and duration of the symptoms—it bears little relationship to the organism concerned. The proportion of GPs who complete notification forms on their patients also varies widely, both from day to day and between GPs. Despite the difficulties of obtaining information, the Communicable Diseases Surveillance Centre of the Public Health Laboratory Service provides an excellent service in monitoring food borne infections, allowing trends to be identified and swift action taken in the case of outbreaks. Their guidance will be essential in advising the Agriculture Committee on recent trends in the incidence of bacterial food poisoning in the UK and in identifying the mechanisms by which to address the most pressing problems. In addition, environmental health officers have a potential role in disseminating information and this could prove an effective use of an existing resource.

Apart from notification of infectious conditions, there should be information provided about issues such as the oestrogenic effect of soya milk. Such issues should not only be notified to the PHLS but a clear mechanism devised for dissemination of information to the public.

Food Hygiene

The current state of food safety in the UK is such that all raw meat should be assumed to be contaminated with pathogenic organisms. These range from *Campylobacter* to *Salmonella* to *E Coli* 0157. The only safe approach for the food industry and the general public is to treat all raw meat as contaminated and adopt "universal precautions" in handling and cooking raw meat. A key factor contributing to the frequency of food borne infection is inadequate cooling at the point of preparation. Cooling to less than 5° C is one of the most important mechanisms for the prevention of food borne infection but it is clear that few members of the public, and some within industry are sure that this is the temperature at which their fridge is operating. Re-education of the consumer is required in the basic rules of preservation and hygiene. Improved information on food handling and preparation to prevent food poisoning should be made available. Guidance should be provided to the consumer at the point of sale, preferably on packaging, about the risks of food poisoning if the food is not properly prepared. For example, with chicken and chicken meat products there is a risk of salmonella poisoning or cross contamination of other products if the products are not handled and prepared correctly. It is also important that full guidance on cooking times is given in relation to microwave power. The National Food Safety Report produced annually by the Food and Drink Federation, Chartered Institute of Environmental Health and Royal Environmental Institute of Scotland provides detailed information on the public's knowledge in relation to food hygiene and safety issues. Trainee food handlers and catering staff require special instruction on the preparation, preservation and handling of food. In the maintenance of hygiene in kitchens, regulations and procedures alone are not enough; explanation of their necessity for the prevention of disease should be given to staff during training and their importance must be reinforced by management.

Most of these points, in addition to a number of other key measures, have been addressed in the Pennington report produced in relation to the *E Coli* outbreak in Scotland. The government has accepted the recommendations of the expert group and these should be implemented in full and monitored for their efficacy. Such measures would have a beneficial effect in preventing all forms of food borne infection, not just *E Coli.*

BOVINE SPONGIFORM ENCEPHALOPATHY

The issue of BSE has raised great concerns amongst the public about the safety of food and mistrust in government action in relation to food safety. In relation to BSE, the BMA has reaffirmed its long held policy that a major weakness in the present regulatory system is the conflict of interest inherent in MAFF between its role in relation to the food industry and its responsibilities towards the public. The BMA therefore called for an independent Ministry of Food to clearly demonstrate government's commitment to the interests of the food consumer. We have therefore welcomed the James Report on this issue. The BMA's concern regarding BSE, now that stringent regulations are in place, is the level of compliance with the regulations and efficient monitoring of compliance by government inspectors. We welcome the BSE Enforcement Bulletin published by MAFF as a means of assessing levels of compliance and note that the latest Bulletin reported 100 per cent compliance at UK licensed slaughterhouses. There is no room for complacency, however, and this level of monitoring must be maintained.

MEAT HYGIENE

Delivery of dirty livestock to abattoirs is a persistent and ongoing problem in Great Britain. This creates many problems within the meat industry including adverse effects for the human food chain. The Meat Hygiene Service has addressed this long standing problem by producing guidelines for the meat hygiene service.[1] The new Food Agency should ensure that the efficacy of this guidance is monitored and that it leads to improvements in the current situation with regard to dirty livestock. The Meat Hygiene Enforcement Report of MAFF reveals a higher level of compliance with regulations in the red meat industry than the white. This may be related to the BSE crisis and the tightening of regulations and inspections, action is needed to ensure that the white meat industry improves its standards also.

GENETICALLY MODIFIED ORGANISMS

There has been much media coverage of the use of GMOs in food production and concerns over safety are evident amongst the public. Currently when questioned about safety the government's response has been to reiterate the procedures which these food stuffs have to undergo before being allowed onto the UK market. However, given the lack of public trust on food safety issues and of government's regulation and monitoring in this area such reassurances are unlikely to succeed. This is revealed by research carried out by the Food and Drink Federation[2] which found that only 2 per cent of respondents were very confident that the controls surrounding the applications of biotechnology in food and agriculture were adequate, with a further quarter only fairly confident. This survey also found that 68 per cent of the population new nothing at all about biotechnology and that 64 per cent had received no information about biotechnology. Farmers and growers are the group thought by most people to be likely to benefit from biotechnology with food manufacturers the next group mentioned. People are much more likely to see benefits for other groups than for themselves and their families.

The first UK concensus conference on plant biotechnology concluded that the products currently reaching the market were more the result of researchers and producers creating a market for their products rather than the market expressing a need or desire for them. There is clearly a need for wider information to be available to the public on the processes involved in biotechnology in relation to food. In addition there needs to be broader debate of any benefits for human health and wellbeing of food products produced using GMOs. Currently the benefits are not obvious.

The BMA understands the policy of MAFF and the European Commission in relation to labelling but considers that until the public have better information regarding biotechnology and the benefits of such processes, all products produced using this technology should be labelled.

Pesticides

The BMA endorses the principle that until we have a more complete understanding of pesticide toxicity, the benefit of the doubt should be awarded to protecting the environment, the worker and the consumer. The BMA report, *Pesticides Chemicals and Health*[3], recommended that information should be made available to the public on pesticide residues in foods. Adequate information should be provided to the public at the point of purchase and consumption of foodstuffs, for example, consideration should be given to the labelling of foodstuffs to indicate maximum residue levels for pesticides. We support the Pesticides Safety Directorate action plan for responsible use of pesticides, published in August this year, which recommends "widespread adoption of pest, weed and disease control which successfully integrates in a cost-effective manner both chemical and non-chemical methods." There is a need to gather information about adverse reactions to pesticides and consideration should be given to a reporting/monitoring scheme. If properly resourced such a scheme could provide a fuller picture of pesticide exposure incidents in the UK, the new Food Agency could evaluate the scheme and report. The new Food Agency should examine the effectiveness and role of the Pesticides Safety Directorate which is far from ideal in meeting the desired criteria of independence, freedom of information, rigorous research and monitoring.

Antibiotic Resistance

Although the risk to humans from antibiotic resistant micro-organisms is one of the major challenges we currently face, the contribution to this problem from resistant organisms in the food chain is uncertain, though possibly significant. Assessing the extent of this contribution is clearly needed. The BMA is a signatory to the enclosed World Medical Association (WMA) statement on resistance to antimicrobial drugs. The final WMA recommendation relates to the use of antimicrobial agents as feed additives for animals reflecting the medical profession's concerns regarding the possible transfer of antibiotic-resistant organisms to humans through the use of feed additives for animals.

Children

Different standards may be needed in relation to young children and food safety due to differences in tolerance to contaminants, allergens or food borne pathogens. Specific guidance may be needed for those foodstuffs primarily consumed by children and infants.

Food Labelling

Food labelling should be mandatory and the BMA has called for more detailed information for customers on the content of food and for regulations to prevent the use of misleading terms. There is still much confusion amongst the public over what constitutes a healthy diet and much could be done to assist the public by developing a statutory labelling system that provides clear information about the fat, sugar, salt and fibre content of all foods in addition to carbohydrates, protein and fat. Where information on fat is provided, this should indicate the type of fat, as it is this information that is important in terms of nutrition rather than fat content alone. Terms such as "low fat" may be misleading to the public—minimum and maximum percentage compositions should be set for making such claims as an item described as "low fat" may only be so in relation to similar products, rather than being low in fat itself. Where nutrients are expressed in terms of the amount per certain weight or volume then there should be regulations to ensure that the product has an overall weight or volume on the packet. Where a food has been fortified this should be clearly marked on the label so as not to mislead individuals into believing that the particular foodstuff contains naturally high levels of particular vitamins and minerals thereby undermining understanding of diet and nutrition.

Apart from nutritional labelling the Board would also like to see labelling to provide information on the use of genetically modified organisms, levels of pesticide residues in products (see sections above) and on treatment by irradiation, at the point of purchase and point of consumption of foods. With regard to allergens in foodstuffs, labelling would undoubtedly help the consumer. However, logistically it may not be possible to ensure that all possible allergens are listed. Labelling should therefore be considered for the more common allergens or those that pose the greatest risk. The most obvious example being for nuts, and also for those suffering from coeliac disease who need to be aware of the presence of glutens. If regulations are to be introduced relating to labelling it is important that the public are fully informed of the regulations and how to interpret the labels. In addition, there needs to be clear guidance for industry and sufficient financing for monitoring and enforcement of the labelling legislation.

Functional Foods and Health Claims

The BMA has deep concerns regarding claims made on foodstuffs as they may lead the public to believe that these products are necessary for a balanced healthy diet when in fact the nutrients mentioned would all be available from fresh fruits, vegetables, nuts, cereals etc most of which are unlikely to be labelled and are also likely to be considerably cheaper. Clear guidelines on the types of claim that can be made are needed, and these must be able to be substantiated by scientific data.

Vitamins/Minerals/Supplements

There has been much debate over the recent decision to change the sale and supply of vitamin B6. The BMA supported the proposed changes of the Medicines Control Agency to place doses of vitamin B6, above 50 mg per day, under the prescription only medicine order, those of 11–49 mg per day limited to sale in pharmacies, and only doses of 10 mg or less to be freely available, whilst further epidemiological research and investigation is carried out on the long term adverse or side effects from excess doses of vitamin B6. However, we are concerned regarding the difficulties of classification of vitamins which may be classed as medicines or foods depending on the final product and the claims made. We would therefore support consideration of the development of a third category of product to cover vitamins/minerals/supplements so that the specific considerations needed can be taken into account. We understand that this is the situation in both Australia and the United States.

Access to Information on Food Safety Issues

Previously the BMA has been consulted on the reporting of food safety issues by the Ministry of Agriculture Fisheries and Food (MAFF). The BMA felt that information, for example in the form of the MAFF/Department of Health Food Safety Information Bulletin should be circulated to Directors of Public Health who could then act as an information resource locally. Information on food safety issues and the results of surveys need to be widely available to public and professions.

Risk Communication

One area that needs detailed consideration is that of communicating health and safety risks to the public. This matter obviously extends futher than the area of food safety; the recent scare regarding the contraceptive pill, for example. However, many of the recent scares have related to food issues. Systems are needed to ensure effective and appropriate communication with the public. The Chief Medical Officer's last Annual Report[4] discussed risk communication in some detail and this matter could be taken futher through the new Food Standards Agency.

8 October 1997

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APPENDIX 13

Memorandum submitted by the Institute of Trading Standards Administration (C13)

SUMMARY

The Institute of Trading Standards Administration is the professional body representing trading standards officers in the UK.

The Institute welcomes the inquiry into food safety issues by the Agriculture Committee and is of the opinion that:

- a major objective of a food standards agency must be to restore consumer confidence through the provision of credible scientific advice and information;
- public safety concerns must come before the vested interests of the food industry;
- local authority enforcement agencies must be taken into confidence of the Ministry to ensure that appropriate and timely advice and information is supplied to the public;
- the introduction of HACCP principles at all stages of production is important to ensure effective food safety standards;
- more research needs to be carried out into the long term effects of residues in food;
- novel food processes should not be permitted unless the true nature of the foods are clearly identifiable;
- labelling is important in ensuring food safety and the health and wellbeing of the nation and new controls are required on nutritional information and identification of ingredients which may cause allergic and possibly life threatening reactions to persons with hypersensitivity;
- legislation should not be introduced without first consulting with representatives of enforcement agencies;
- new food processes should not be allowed without the resources and scientific support for trading standards officers to ensure compliance;
- co-ordination of all enforcement agencies is essential in order to maximise the use of resources and ensure uniformity in the application of controls; and
- increased resources are required for all food control work undertaken by local authorities and costs of implementing new measures should be an integral part of any new legislative responsibility.

INTRODUCTION

The Institute of Trading Standards Administration (ITSA) is the national body representing trading standards professionals in the United Kingdom. Trading Standards Officers (TSOs) are responsible for a wide range of food matters including composition, labelling, nutrition, food fraud, adulteration, food additives, novel food processes together with the enforcement of fertilisers and feedingstuffs and animal health and welfare legislation. Their long involvement in food enforcement is well recognised by consumers and businesses and excellent relationships have been developed with government departments and other enforcement agencies over many years. The range of their activities has led to an extensive and expanding involvement in many of the food crises, such as BSE. TSOs operate at local level in the county council's and unitary authorities and as such are seen by the public as being in the front-line of food law enforcement in ensuring their safety.

ITSA submitted a detailed response to Professor James' report on the development of a Food Standards Agency. A copy of the executive summary is attached at Annex 1.

In addressing the issues raised in the notice outlining the terms of reference for the Agriculture Committee ITSA have done so under three specific categories, namely:

- information;
- food safety risk; and
- effective enforcement.

INFORMATION

The BSE crisis is a classic example of where the information provided to the public and to enforcement agencies created considerable problems. Statements were made by ministers and senior officials who categorically denied any risk to public health from BSE, later to be questioned. This resulted in both the public and enforcement officers being very sceptical about the interpretation of scientific data and statements from government sources. That has lead to a lack of consumer confidence in the Government's food safety policy. This lack of confidence is demonstrated by the fact that new food processes such as irradiation and genetic modification are viewed suspiciously by most members of the public. There is little doubt that one of the major roles of the proposed Food Standards Agency must establish credibility in the provision of scientific evidence and information supplied to the public.

Consumer confidence will only be restored if information and advice is based on genuine public safety concerns and is not prejudiced by the likely or possible effects of such statements on the relevant trade or industry. The BSE crisis highlighted the lack of transparency and accountability in Government Departments who were prepared to limit the information to the public in an attempt to protect the Industry. Time has since shown that such an approach serves no one's interest.

It is vitally important that the front-line enforcement agencies such as trading standards, should be provided with accurate and unbiased information so that they can assist in alleviating public concern by giving advice on food safety which does not compromise their integrity and impartiality. During the BSE crisis enforcement agencies have not been taken into the confidence of those in MAFF who were dealing with the food safety. In fact, had recommendations made by trading standards officers been put into effect at the very beginning of the epidemic, in relation to labelling and control of fertilisers and feedingstuffs and the control of bovine offal, then some of the problems that arose may have been avoided.

Improved information flow between government ministers and enforcement agencies would also ensure scarce food control resources are used more effectively. This would coincide with the "best value" principles presently being advocated by the Government. Information across and within Ministries and the other agencies involved in food control has caused problems for enforcement officers and for effective food control. The solution lies with Professor James' Report. A food agency should have a "plough to plate" approach to food enforcement bringing together on a strategic level all the information and advice necessary to ensure food safety and public confidence. It should not however, have the responsibility for discharging operational tasks other than in exceptional circumstances.

Food Safety Risks

There are four major areas that presently cause concern in relation to the safety of food. These are: microbiological contamination; the use of chemical additives and contaminants; novel food processes such as genetic modification and quality issues relating to nutrition and the adverse affects of ingredients. The extent of the risk in these areas depends upon the particular stage in the production and distribution process, nevertheless each has possible risks to public safety.

Microbiological

Microbiobical problems can clearly be caused by poor hygiene control at the farm, in transit, at slaughter, in food processing, at the point of sale, in the catering trade and of course in domestic households. All must be considered to be of equal importance and effective enforcement ensured at all stages. Introduction of HACCP principles are essential to ensure food safety, as is appropriate information and advice to the public and the trade.

Additives and Contaminants

Chemical contamination can similarly occur at a number of different stages. The use of pesticides on farms is an area which causes considerable concern to the public. Whilst surveillence checks show few adverse samples affected by pesticide contamination, the chance of detection is very limited.

Furthermore, animal feeding stuffs can cause major safety problems in the food chain as evidenced in the West Country where lead found in feed then contaminated the milk supply. Similarly misuse of medicines and failure to comply with withdrawal periods by farmers is another area of concern. This needs to be recognised by the Food Standards Agency and in future Government policy.

ITSA believe that more research needs to be done to determine the long term effects of chemical residues that find their way into human food and that stricter controls need to be imposed on the use of pesticides and the composition and labelling of fertilisers and feedingstuffs.

The application of chemical additives and contaminants in food processing raises points of public interest. Adulteration of food stuffs is not uncommon. Some of those contaminants have caused serious health risks. Vodka contaminated with industrial methylated spirits; wine containing diethyleneglycol and methylisocyanate; apple juice containing patulin and even an orange drink which contains ephadrine, (a prescription only medicine) are some of the more interesting examples. Add to these, examples of high levels of colours found in children's sweets; illegal quantities of preservatives in flour confectionery and concerns over the excessive use of artificial sweeteners in foods and there is little wonder that enforcement officers and consumers have genuine fears about the food processing industry.

Novel Food Processes

The food industry is very keen to advance food technology and often does so despite the concerns of the public. When irradiation was allowed for certain foods, the Industry was reluctant to use the word "irradiated" on products and preferred a "less emotive" term. Whilst not successful in their arguments they were indicative of commercial interests endeavouring to put aside public concern. When properly informed, the public may well choose not to support processes of which they are uncertain.

Genetic modification is the novel food process of the future and as regards those food items that have already been approved there is still considerable controversy. The public now have to accept the use of GM soya without any means of identifying the genetically modified variety in a vast range of household food stuffs. There are many genetically modified products now in the latter stage of development and it is crucially important that strict rules are introduced to ensure their safety. Whilst recent regulations arising from an EC Directive require such novel food processes to be approved within the Community, it is important that all genetic modified foods or foods containing genetically modified ingredients are clearly identified for consumers so that they can make the appropriate choice, particularly as the long term effects of genetic modification have yet to be determined.

Quality

"Quality" covers a wide range of issues, from "use by dates" to allergens in foodstuffs. The nutritional quality of food is a serious health issue and was identified in the Health of the Nation initiative of the previous government. Food technology allows for the use of a whole range of processed foods and ingredients previously not available to consumers. Labelling of foodstuffs is an important tool in addressing concerns over nutrition. Unfortunately whilst nutritional labelling information is compulsory in certain circumstances, it is not in relation to many other foods. In addition the calculation of nutritional values can be based on a very loose approach which can include using typical values rather than accurate analysis.

There is now increasing concern over the number of ingredients which cause allergic reactions. Peanuts is an obvious example and manufacturers are often voluntarily marking their products with a warning they may contain peanuts. Nevertheless there are now many other products where ingredients can cause serious illness, for example; shellfish, wheat and dairy products. There is clearly a need to ensure that all processed foods are labelled with ingredients that are known or likely to cause hypersensitivity.

There is also the question of the use of additives, especially sweeteners in food which can be consumed in large quantities by young children. Labelling should take account that certain types of products are consumed by different sections of society and special regard should be had to that in the labelling and composition of food.

Use by dates are an important factor in food safety and should be indicated together with the appropriate storage temperature, as a means of improving health and hygiene standards in the home, on both pre-packaged food and counters where loose food is sold, for example, in delicatessens.

ENFORCEMENT

No matter what legislation or controls are introduced they are only effective if the enforcement regime is adequate and has the resources to ensure proper compliance. One of the major problems of the last decade has been the introduction of legislation with little regard to its enforceability. Legislation that was rushed out on BSE has rarely discussed with trading standards officers and others responsible for its enforcement and as a result caused considerable problems.

Little regard is had as to whether or not enforcement agencies have the scientific support to be able to enforce the regulations effectively. The ability of enforcement officers to detect irradiated food illustrates this point. Genetic modification will be extremely problematic in that the detection of ingredients that have been genetically modified and used in processed foods will be virtually impossible. The cost of such work is also prohibitive when viewed against the resources available to enforcement agencies. It is the view of ITSA that novel food processes or the use of ingredients, additives and contaminants should not be allowed unless there is the ability of enforcement agencies to detect them and take appropriate action.

One of the clear examples of the failure of enforcement in relation to food safety is again shown by the BSE crisis. The number of agencies involved in the BSE enforcement regime is considerable including; Local Authorities, State Veterinary Service, Meat Hygiene Service, Intervention Board, Regional Service Centres and others commissioned on their behalf, eg The Meat and Livestock Commission. This caused serious co-ordination problems. The reluctance of government agencies to pass information between each other and to the local enforcement authorities has undoubtedly resulted in poor compliance and a loss of public confidence.

The Trading Standards Service many years ago identified the need for effective co-ordination. This was achieved by the establishment of the Local Authorities Co-ordinating Body on Trading Standards (LACOTS) and regional co-ordinating groups.

One of the major tasks of any food standards agency will be to draw together the activities of all the various enforcement agencies and ensure that there is no duplication of effort and that there is an effective information flow between such bodies. Unfortunately there is every indication that the government agencies that have been established in recent years are more and more reluctant to share information and have become isolated in their approach to addressing the overall position on food safety.

Finally, whilst considerable additional resources have been provided for the Meat Hygiene Service and the SVS, no resources have been made available to local authorities for increased responsibilities brought about by the BSE crisis. Recent funds allocated for hygiene enforcement are welcomed but more resources are necessary for all areas of food control work. Without that issue being addressed trading standards officers will not be able to provide the protection the public now demand and deserve.

10 October 1997

Annex 1

Executive Summary

FOOD STANDARDS AGENCY: INTERIM PROPOSALS BY PROFESSOR JAMES

The Institute of Trading Standards: Response

The Institute of Trading Standards Administration is the professional institute representing trading standards officers in the UK.

The Institute:

- welcomes the report but believes that the Agency should be part of a wider, coherent consumer strategy;
- believes that the accountability and transparency of the Agency would be best achieved by it reporting to the Cabinet Office;
- supports the "plough to plate" concept believing that a holistic approach is the best means of ensuring food standards;
- is pleased that the Report recognises the benefits of local enforcement which provides access and accountability, but accepts there are difficulties, which are capable of correction, experienced by some local authorities in the wake of Local Government Re-organisation.
- supports the concept of service level agreements for local authorities matched to resources providing they are flexible enough to take account of local needs and all aspects of food enforcement work, not only inspections and sampling;
- believes the enforcement responsibilities should be distanced from the Agency to emphasise its independence;
- would wish to see trading standards expertise represented on the Commission and in the executive of the Agency;
- would wish to see the Agency having a major input into European food policy; and
- supports the name "Food Standards Agency".

The Institute offers its support and assistance in the implementation of the recommendations in the Report.

APPENDIX 14

Memorandum submitted by UNISON (C14)

Thank you for your letter of 30 July 1997 addressed to Rodney Bickerstaffe.

UNISON represents meat hygiene inspectors working for the Meat Hygiene Service. The views expressed in UNISON's evidence to the select committee are drawn from these members, and relate to food safety risk at slaughter.

The problem of poor hygiene standards at abattoirs is one which the new government is concerned to improve upon. UNISON wholeheartedly supports this initiative. There are a number of areas in which UNISON believes MHS operational practice and MAFF policy have to change to improve these standards. Attached are two UNISON policy papers [not printed] which set out our views. The first was written prior to the election, the second more recently.

UNISON supports the operation of a centralised Meat Hygiene Service which has, as its sole purpose, the enforcement of a strong system of supervision and inspection, every aspect of which should be controlled by the MHS.

In summary, UNISON members' concerns are:

1. The MHS was created to serve the meat industry above the consumer.
2. The influence of the industry continues to be a considerable factor in holding back hygiene initiatives.
3. The deregulation of poultry meat inspection should be reversed.
4. The role of contract veterinary staff in policing hygiene standards needs to be reviewed.
5. The Fresh Meat Hygiene Regulations should be amended to make it an offence for a plant operator to present a faecally contaminated carcass for inspection.
6. The MHS Operations Manual should be revised to bring it in line with the new government's stated line on effective enforcement.
7. MAFF should take a far more robust line in taking legal action against plant operators, who breach the hygiene regulations.
8. There should be more permanent, professional inspection staff rather than the large cohort of insecure temporary inspection staff currently employed by the MHS. The role of meat hygiene inspectors should be developed via training and professional development.
9. Company based HACCP (Hazard Analysis and Critical Control Points) schemes are a welcome development, but they should not become a replacement for independent inspection. This would be deregulation by another name.

Please let me know if your require any additional information.

6 October 1997

APPENDIX 15

Memorandum submitted by the Association of Port Health Authorities (C15)

IMPORTED FOOD CONTROL

Products of animal origin (including fishery products) can only enter the European Union at Border Inspection Posts (BIP) approved for the importation of specified products. The importer has to give the BIP prior notification of the importation of any products of animal origin by submitting a certificate of Veterinary Checks, together with any requisite health certificates. All consignments are subject to a documentary check and some will be additionally subjected to an identity and physical examination, which could involve sampling and testing for either chemical or microbiological examination. The BIP may detain consignments until all the checks and results of any special examination are completed. If the results of the checks are satisfactory, the consignment will be released after payment of the appropriate charges to the BIP undertaking the veterinary checks.

The EC stipulates that the level of fees should cover the actual salary and administrative costs incurred carrying out controls and expenditure. Member States are not authorised to charge an amount for veterinary checks which exceed the actual cost of the inspection. A system of standardised charges across the EU is currently being introduced.

Nuts, nut products, dried figs, dried fig products entering the United Kingdom from a country outside the European Community are controlled by Regulations which specify the amount of aflatoxin permitted in the products at retail sale level at 4µg/kg. Provided that consignments with more than 4µg/kg and not more than 10µg/kg may be subject to conditions, be released for processing to ensure compliance with the 4µg/kg limit before sale to the consumer.

The Aflatoxin in Nuts, Nut Products, Dried Figs and Dried Fig Products Regulations 1992, permit Ministers to designate the places at which consignments of these products may be imported. Importers of products subject to these Regulations are required to give an authorised officer of the Port Health Authority (PHA) a certificate identifying the consignment, after arrival in the PHA district the authorised officer is required to inspect the document accompanying the consignment. If the port health officer (PHO) considers it necessary, he may detain the product and obtain samples to check the level of aflatoxin present. The consignment may be detained until it has been established that the aflatoxin level meets legal requirement.

All imported food not of animal origin (including fishery products) and all other imported food not covered by the legislation mentioned above, is subject to the Food Safety Act 1990 and the Imported Food Regulations (IFRs). These specify that imported food must not be unfit for human consumption, unsound or unwholesome or injurious to health. There is no requirement under the IFRs for the importer to land imported food at specific ports or to give any notice to the PHA that any imported food has or is due to arrive in any port or other place. Consequently the PHOs have to devote considerable time to checking the arrival of ships and aircraft to determine if they have any imported food aboard. In case of any difficulty the PHOs can ask the Customs officer to detain any food, either specifically or generally until he had examined that food. The IFRs oblige Customs Officers to comply with this request and the food cannot be cleared from Customs charge until the PHO gives a release notice in writing.

Once imported food subject to the IFRs has been identified on a ship or aircraft, the PHO has to ensure that he undertakes any inspection he considers necessary before the foodstuffs are removed from the place of landing. This involves invoking his powers to examine any food deposited in his district and giving notice to the importer of any restrictions on the movement of the foodstuffs.

While the importer is required to provide all the facilities the PHO requires to undertake his examination of imported food, it not infrequently happens that the lack of a full description of a consignment on a bill of lading or manifest, can result in the removal of imported food from the place of landing without the PHO being aware that the consignment comprises suspect food which could cause food poisoning or be injurious to health. This is a particular problem at airports where the Airport operators priority is to remove all goods from the terminal as soon as they are clear of Customs charge. There are powers in the IFRs to defer the examination of imported food to its place of destination, but these are not normally utilised by PHOs as experience over many years had shown that containers were frequently diverted while in transit and evaded public health checks.

It has to be acknowledged that large food importers and major supermarkets for example, take their responsibilities under food safety law seriously. However, food is frequently traded on the international markets as a commodity that can be bought and sold without the dealer ever seeing the foodstuffs that have been traded. It is all too easy for these dealers, to evade port health checks, usually by landing the consignment for clearance in another EU State.

We have suspected that this has happened with Iranian pistachios which have, until recently, evaded checks on aflatoxin on entering the UK. Intensified checks in Holland and Germany have confirmed the problem identified in the UK, that checks and certificates in Iran could not be relied upon. As a consequence of the health hazard, the EC has imposed a temporary ban on imports into the Community of all pistachios from Iran. The EC has for some time had under consideration Regulations to limit the levels of mycotoxins in susceptible foodstuffs. However the demanding sampling plans proposed would actually mean that PHAs could sample fewer consignments because of the costs involved. This is a major risk to public health that requires proper funding to enable effective control.

If the fitness and wholesomeness of imported food is to be secure, there needs to be a uniform system of checks on all foodstuffs entering the EU and not just for products of animal origin. It is possible that in the longer term, the risk to human health arising from the consumption of food contaminated with mycotoxin, could be regarded as significant as BSE. It should, we think, be a priority of the European Commission to ensure that all food entering the EC should be subject to health checks and the system in place for checking of products of animal origin should be extended to cover all food. And in particular that foodstuffs entering the EU should only do so at specified ports and airports, the authorities responsible for the checks should have adequate notice of their arrival and the cost of the checks should be paid for by the importer, following the model set by the controls on products of animal origin.

FOOD HYGIENE ON SHIPS & AIRCRAFT

The EC Directive on the Hygiene of Foodstuffs (93/43/EEC) states that the protection of human health is of paramount concern, and that food business operators must ensure that only foodstuffs not harmful to health should be placed on the market and appropriate powers should be guaranteed to the competent authority to protect public health. The Directive defines a *food business* as any undertaking, handling or offering for sale or supply of foodstuffs.

The shipping and air transport industry operating from ports and airports in the UK, supply each year to the travelling public over a hundred million meals. Yet preparation and supply of meals on board ships and aircraft are not subject to either the provision of the Food Safety Act 1990 or the Food Hygiene Regulations. Provision was made in the Food Safety Act for Ministers to make an Order to include any ship or aircraft within the definition of *premises,* which would have enabled food law to be applied to ships or aircraft. Ministers have not made any such order, so only the food supplied to passengers on coastal excursions is subject to food hygiene control. Except that the Isle of Man Government apply their Food Hygiene Regulations to food supplied on ships, and the Isle of Guernsey extends its food hygiene law to include any ship and aircraft.

It is not possible to establish how many people travelling by ship and aircraft suffer ill effects from food they consume on their journey, as they usually disperse immediately on landing and the symptoms of illness would not usually appear for some hours after the consumption of infected food. We are however concerned that there are serious hygiene deficiencies on the supply of food to passengers on some ships and aircraft, and we can see no reason why those travelling by sea and air should not be protected from unsafe food in the same way as when taking meals in restaurants and canteens ashore as is required by the Food Hygiene Directive.

14 October 1997

APPENDIX 16

Memorandum submitted by Greenpeace (C16)

Greenpeace is an international environmental pressure group with offices in over 30 countries. Greenpeace is independent of governments and industry and is supported by donations from members of the public. Greenpeace has nearly 3 million supporters worldwide.

The evidence we are submitting deals with the issue of the safety of genetically modified foodstuffs and the inability of the current institutional arrangements to handle the absence of full knowledge, especially scientific knowledge, in a way that will effectively protect public health.

1. The Risks of Genetic Modification in Food

There are real risks to the introduction of genetically modified food that are not recognised by the regulatory system. These relate especially to the unpredictability of the results of genetic modification.

Genetic modification is the use of recombinant DNA technology. This gives the power to move DNA from one organism to another, to identify the function of particular genes and to transfer the DNA coding for the characteristics from one completely unrelated species to another.

Uncertainties enter the frame at many stages. At the very base of the technique, the insertion of introduced DNA into host organism's DNA is a random process; disruption can occur to existing genes within the host organism with unknown consequences:

— Inserted genes may affect the expression[1] of quite separate genes.

— The expression of inserted genes may affect the biochemistry of the cell in unexpected ways.

These and other scientific uncertainties need to be viewed in the context of evidence that gene flow[2] in the environment such that it affects the food chain may be much more extensive that once thought (this is of relevance for example to transfer of antibiotic resistance between different kinds of bacteria in the gut).

This submission is concerned purely with the risks of genetic modification in food. There are substantial health and environmental risks associated with GE crops and microbial genetic modification which lead Greenpeace to its position of advocating a ban on releases of GMOs to the environment altogether. For reasons of space these are not addressed here.

1.1 *Allergies*

Transfer of allergicity from one species to another is probably the *cause cèlebre* of GM risks.

Dramatic evidence that this can occur came from a soya bean genetically modified with genes from a brazil nut. Blood serum from people known to be allergic to brazil nuts was tested for the appropriate antibody response to the gene transferred to the soya bean. Seven out of nine volunteers did show such a response to the GE soybean and the researchers concluded that the allergenicity had been transferred with the transferred gene[3].

Pioneer Hi-bred developed this soya bean for use in animal feeds but from the outside one soya bean looks much the same as another, and fears that the product could end up in the human food chain meant that Pioneer stopped the commercialisation of the product.

The implication of this finding should not be lost. As was pointed out by a writer in the medical journal where the results were reported: "Most biotechnology companies use micro-organisms rather than food plants as gene donors, even though the allergenic potential of these newly introduced microbial proteins is uncertain, unpredictable, and untestable" and goes on to point out that "[in this case] the donor species was known to be allergenic, serum samples from people allergic to the donor species was available for testing . . . The next case could be less ideal, and the public less fortunate."[4]

1.2 *Toxicity*

Metabolism can be disturbed to introduce toxicity, even where the change to biochemical pathways is quite different from the point of expected action of the genetic alteration.

For example, a yeast was modified to produce high levels of enzymes that are important in the breakdown of sugar. The scientists were concerned to look at the effects of boosting enzyme activity on the different chemical pathways of the breakdown process. The researchers found that concentrations of a toxic and mutagenic product, methyl glyoxal (MG) was up to 30 times higher in the mixtures with the genetically modified yeast compared to the original strains. The fact that boosting the concentration of an enzyme can affect build up of products several metabolic steps further downstream has serious repercussions for the credibility of the concept of "substantial equivalence"[5] which underpins the testing and labelling regimes applicable throughout Europe as a consequence of the Novel Foods Regulation[6]. As the scientists put it in their conclusion:

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[1] The expression of a gene is the translation of the genetic code it carries into protein: over-or under-expression of a gene can have major effects on the functioning or appearance of an organism.

[2] Gene flow refers to movement of genes between organisms of different species, genera, etc, or between different populations of the same species.

> "in genetically engineered yeast cells, the metabolism is significantly disturbed by the introduced genes or their gene products and the disturbance brings about the accumulation of the unwanted toxic compound MG in cells. Such accumulation of highly reactive MG may cause damage in DNA, thus suggesting that the scientific concept of 'substantially equivalent' for the safety assessment of genetically engineered food is not always applied to genetically engineered microbes . . . the results presented may raise some questions regarding the safety and acceptability of genetically engineered food, and give some credence to the many consumers who are not yet prepared to accept food produced using gene engineering techniques."[7]

Further very small changes in composition can have dramatic effects as illustrated by the outbreak of eosinophilia-myalgia syndrome (EMS) in the US after people had consumed a contaminated batch of the amino acid tryptophan.

So many people were affected by EMS that it caused over 36 deaths and thousands of disabilities, some estimates placing this as high as 10,000[8]. The problem was linked to a contaminated batch of tryptophan coming from the Japanese company Showa Denko, which had been using a newly modified strain of genetically modified bacteria; the new modification being intended to boost the concentrations of an intermediate chemical, and ultimately the output, in tryptophan synthesis. It is unclear as to whether the genetic modification or change to the post-production filtration process was responsible for the damaging contaminants getting into the marketed tryptophan[9]. Although a causal agent (or agents) for the medical problems has not been identified, as one review commented: "all the analytical studies revealed the contaminants' low concentration in L-tryptophan and this means that the causal contaminant(s) must be very potent indeed"[10]. Because there was such a low concentration of the contaminant, L-tryptophan could be said to have remained "substantially equivalent" after the production process was modified, yet it was clearly deadly. The current EU Novel Food Regulation[11] bases its testing regime prior to marketing on the concept of "substantial equivalence", and it is doubtful that this legislation would prevent a reoccurence of this kind of problem elsewhere.

These points demonstrate that the risks are real. The remainder of this submission deals with aspects of policy that can allow these unpredictabilities to become public health risks if not addressed in the formulation of the new Food Agency. It should be recognised that the implications of these problems stretch far beyond labelling and segregation of commodity crops (essential though both of these are) to the responsibility of Government to protect its population.

2. Bad Food Risk Decisions Will Continue

GM food exposes failings at the science-policy interface. Advisory committee advice expressing the scientific opinion that there is, at that point in time, "no evidence of harm" is misconstrued by decision-makers, sometimes quite intentionally, as "evidence of no risk", an entirely different matter. This gives a green light to perpetuation of unacceptable risks.

BSE shows how misconstructions exactly of this type led to disaster. Identical expressions are now being used to justify release of GM foods into the food chain[12].

For example

"There is no evidence from the present experiment that BSE presents a health risk to human beings any greater than does scrapie" (HF Baker et al 1993)[13]

and

"There is no reason to believe BSE will be any different from scrapie" (John Gummer, Minister of Agriculture Fisheries and Food, 1990)[14]

and

"there is no evidence indicating that the use in animal feeding of the genetically modified maize will give rise to any adverse effect on animal health" (Report of the Scientific Committee on Animal Nutrition, 1996)[15]

and

"The Scientific Committee on Food have confirmed that there is no reason to believe that the genetic modification of the GM maize will give rise to any adverse effects on human health from its use in human food" (John Gummer, Secretary of State for the Environment, 1996)[16] *and*

"All genetically modified organisms currently in the food chain have been approved on safety grounds following a thorough scientific assessment. I cannot therefore see any reason for preventing their use" (Jeff Rooker, Minister for Food Safety, 1997)[17]

The regulatory system fails comprehensively when faced with scientific novelty and its inevitable associated uncertainties. Its repeated reaction is decision-making paralysis.

3. The Need to Say "No"

3.1 *A "big picture" approach*

Historical experience and research into public attitudes shows a considerable mismatch between the narrow remit of technical committees and the bigger picture questions about the future direction of developments[18]. Anecdotal evidence from existing committees like the Advisory Committee on Novel Foods and Processes (ACNFP) or the Advisory Committee on Releases into the Environment (ACRE) indicates frustration that the remit is too narrowly cast to allow consideration of issues raised by these representatives that fall outside a strictly technical framework.

The public see the big picture, even including environmental implications. If the regulatory system is blinkered it cannot possibly pre-empt risks with potential for disastrous political and economic resonances which are obvious to the supposedly uninformed public.

3.2 *Handling uncertainty*

The fundamental and unresolved issue is how to react when, as is very often the case, an expert scientific analysis does not given a certain answer. Business interests promoting a new genetically modified food naturally assess the risk associated with the uncertainty as slight relative to the gains on offer. But then they as risk makers are not actually the risk takers. The health risk will be borne by the consumer and most of the financial risk will be borne by farmers, retailers, and in the case of BSE-style crises, the taxpayer.

3.3 *Risk avoidance*

Very often the technical risk assessment will say low risk (to public health or the environment) but the public—quite rationally—see no reason to bear any risk.

Rather poignantly in the case of GM foods, surveys[19] show the public do not want to eat GM foods, but GM soya, for example, is being forced onto the market anyway. A plethora of other GM foods are in the pipeline. The scientific assessment can make no guarantees that unexpected consequences, as outlined in preceding sections, will not arise in the medium or long-term. If and when an unpleasant consequence comes to light public anger will—rightly—be considerable, because the perception that the system never really considers avoidance of such risks will have been proved right again.

4. Re-framing the Debate

A key reason that the present system continues to produce unacceptable risks is that the structures for scientific advice malfunction allowing accountability to disappear.

The remit of advisory bodies is cast narrowly so that "big picture" social, cultural, or economic concerns are excluded, despite the presence of consumer representatives. Experts on those committees argue that these are political questions that should be discussed elsewhere. However, politicians use advisory committee advice as a means to avoid discussion of these broader more difficult questions, and crucially, to avoid responsibility, instead churning out the "based on sound science" mantra. But the "science" referred to necessarily contains considerable uncertainties. This is invariably so for discussion of long-term, widespread, irreversible risks to health and the environment where the statistical assessment of risk is small but the health or environmental consequences of harm results might be vast. GMOs are one such, pesticides and herbicides pose very similar issues although arguably are more reversible.

The politicians deserve most of the weight of the blame for abdicating responsibility to scientists, but blame must attach to the advisory committee members too, who know full well how their "technical" advice will be put to use. They of all people are in a position to see the social and cultural questions that are nowhere being debated and everywhere being avoided, often to the convenience of commercial interests.

Where, for example, was the debate about whether as a society it is desirable to embark on a course towards genetic modification of food, which if the plans of biotechnology companies are to be taken as a guide, could rapidly become a majority of staple crops and foods?

5. A CHANGE OF CULTURE

A change of culture is badly needed to prevent scientifically uncertain risks like GMOs becoming BSE-style crises. It is important to realise that the problems with current institutional arrangements are not just a matter of "public perception", to be dealt with by co-opting a few people the public might have some trust in and hoping that the confidence issue clears itself up. Ultimately the public will see through rearrangements of chairs. The new culture must mean:

(a) avoidance of risk—not, as at present, avoidance of responsibility

(b) "big-picture" debates and decisions, overtly in the political domain, with an end to the pretence that the technical discussion is the be-all and end-all, and where politicians must justify a decision to leave out broader considerations.

(c) giving real weight in those debates to cultural and social views about the trajectory of developments in food—never again should there be a case like GM soya amounting to "it's scientific progress: you're having it whether you like it or not".

Public confidence is deeply associated with trust and the current lack of trust is rooted in reality. Development in pesticides, nuclear waste disposal, and of course BSE, have indicated that public distrust was a better long-term analysis of the risks posed than the trusting approach taken by the regulatory system.

Nor is this something that can be "educated out" by generating more "public understanding" of genetic modification. Right across Europe, there is evidence that the more people understand about genetic modification the lower is their level of acceptance of the technology[20]. If, in fact, GM food is anathema to the public mind, what is needed is acceptance by the policy community that such an opinion might be rational, and moreover good judgement.

The clear message is: when people know more about GMOs and GM foods they want them less—any regulatory system that starts out by deciding not to listen to this swell of opinion does so at its peril.

6. A WHOLESOME FOOD AGENCY

To deal with an issue like GM food the appropriate response is risk avoidance. To succeed in its task, a Food Agency needs to eliminate GM foods from the food chain.

A "holistic" approach needs to be taken to decisions about food issues, which brings into consideration environmental risks. For GM foods there is a fundamental question—at source—as to whether as a society it is desirable, for example, to legalise Bt crops developed to poison the insects that eat them, and furthermore which might irreversibly out-cross the toxin gene with related wild plants.

But how far "upstream" will the Food Agency be able to act? This is a critical point. To avoid a hazard like GM foods, the whole direction of food policy needs to be changed. This means a Food Agency powerful enough to set a new course for agriculture, which looks to steer society away from completely unnecessary risks like GM foods and to promote wholesome food—a Wholesome Food Agency.

7. CONCLUSIONS

7.1 The risks of genetically modified food are real and unpredictable.

7.2 Greenpeace considers that an issue key to the debate on food safety is being omitted: decision-making in the face of scientific uncertainty.

7.3 To deal with scientifically uncertain risks the new system must draw on wider considerations than narrow technical considerations of food safety: including societal and cultural valuations of the risk.

7.4 Coping with scientifically uncertain risks requires an advanced system designed to produce risk avoidance.

7.5 In the case of genetically modified foods this means: an Agency mandated to eliminate GM foods from the food chain.

7.6 Present food policy amounts to "it's OK if it doesn't kill you or poison you too much". A new agency must take on the task of reversing this policy to instead promote wholesome food and eliminate unwholesome food: A Wholesome Food Agency.

7.7 This necessitates an "upstream" mandate including an environmental perspective.

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APPENDIX 17

Memorandum submitted by The Institution of Professionals, Managers and Specialists (C18)

INTRODUCTION

1. The Institution of Professionals, Managers and Specialists (IPMS) welcomes the opportunity to submit evidence to the Select Committee's inquiry into Food Safety. IPMS has a wide and diverse membership across policy and research functions in the Ministry of Agriculture, Fisheries and Food (MAFF), the Department of Health (DH), the Executive Agencies and bodies linked to both Departments, the Biotechnology and Biological Sciences Research Council, the Health and Safety Executive and the Environment Agency. Government scientists, many of them members of IPMS, are involved in all aspects of the food chain, from R&D at the cutting edge to those who disseminate information to farmers. Our members are therefore well placed to comment on issues of food safety. IPMS' response to Professor James' Interim Proposal on the Food Standards Agency, a copy of which is enclosed, [not printed] draws heavily on their first hand experience.

2. IPMS accepts that there is increasing concern over food safety standards, in particular in the wake of the BSE crisis and incidences of *Ecoli* food poisoning in Scotland and elsewhere. This seems unlikely to diminish. For example, in late September work by Professor Pennington showing that at least one third of uncooked chickens on sale are infected by campylobacter was widely reported in the national press. According to reports up to 500,000 people are poisoned by this route each year with symptoms ranging from gastro-enteritis to paralysis. In our view this highlights the need for:

- A strong science base;
- Effective and consistent enforcement of food safety standards; and
- Enhanced public education and information.

3. These themes are considered in greater detail below, though we have sought to structure our evidence in response to the specific issues identified by the Select Committee. We would also emphasise that high food standards are good for business. Both New Zealand and Denmark enforce very high standards which are used as a positive selling point for their food.

Trends in Bacterial Poisoning

4. Despite increasing concern over food safety standards, reliable hard data on the incidence of food poisoning is lacking. It is certainly the case that the number of food poisoning samples identified is only a fraction of food poisoning incidents. However, this issue is being actively investigated both by the DH's IID programme, due to conclude shortly, and by MAFF and DH surveillance programmes stemming from the 1990 Richmond Committee report on microbiological safety of food. The Richmond Report also resulted in the establishment of an advisory committee, whose role is under review in preparation for the establishment of the Food Standards Agency. Members are of the view that this area has been given appropriate priority and has been properly funded in recent years. It is also worth noting that there have been some significant successes, for example in reducing the incidence of listeria in the wake of publicity targeted at vulnerable groups, particularly pregnant women.

Scientific Understanding

5. Leading edge research in public sector science continues to be threatened by funding cuts and disruption caused by an almost continuous process of review and rationalisation over the last five years. For example:

- A recent review of epidemiological research on BSE concluded that there was ". . . solid work by too few scientists, involving too few studies and too few animals". It said "it is easy to be wise with hindsight but the BSE saga should be a warning to all countries not to skimp on research into emerging problems that have potentially serious consequences for agriculture or public health".
- The Government's Central Science Laboratory (CSL) is involved in research on a wide range of issues that impact on food safety. These include research on phthalates in milk, the use of organo-phosphates in agriculture, and the ability of plastic food wrappings to contaminate food. However, the increasingly contractual nature of work allocation at CSL and the need to seek contracts outside MAFF is creating a dangerous gap in overall ability to maintain core scientific capabilities and to respond to new crises and developments.
- The Director of the Institute of Arable Crop Research (IACR) has warned that failure to invest in long term research could see hidden disasters, such as more resistant diseases, flaring up. Long term research work at the IACR has been cut from 80 per cent to 35 per cent of projects and research funds available for post-doctoral research are generally short-term.

6. Overall public funding has reduced significantly in real terms and an increasing proportion comes in small short term competitively won packages rather than long term grant-in-aid support. In addition to having sufficient funds, continuity and stability are required to establish a broad research capacity to match long term strategic needs in the public interest. For example, the DH's strategy for R&D relating to human health aspects of transmissible spongiform encephalopathies notes that research has so far been concentrated in too few centres to cope with the need for research and advice. There is a clear need for research centres, in this area and others, to be put on a firmer footing. Research cannot just be turned on and off like a tap, so problems must be anticipated. There must be a strategy and an ability to co-ordinate and call up the required pre-existing expertise. Of 34 Public Sector Research Establishments (PSREs) that have survived an Efficiency Scrutiny and Prior Options Reviews, 25 are involved in the food chain to varying degrees. These are detailed in IPMS' submission on the Food Standards Agency. However employing research staff on short term contracts, as these establishments have been forced to do, is simply not appropriate. Similarly, the increasing emphasis on a customer/contractor approach has resulted in a greater focus on short term and more predictable research projects.

7. In summary, if overall capacity in research is to be sustained, it is essential that:

- Long term funding is provided to PSREs to enable expertise and infrastructure to be consolidated;
- Contracts are of a scope and duration appropriate to the subject of the research;

- Mechanisms, such as concordats, whereby longer term programme frameworks are agreed between customers and contractors are used more widely; and
- There is a reduction in the reliance on short term contract staff.

Food Safety Risk

8. In his Interim Proposal on the Food Standards Agency Professor James highlighted the problems within the UK of uneven enforcement of food law and the adverse impact of deregulation. There is no doubt that enforcement needs to be stronger, more effective and more consistent than at present, and that fundamental to this are the provision of additional staff and clear enforcement powers. For example, feedback from our members is that there is often a haphazard attitude on the farm to the use and storage of chemicals and antibiotics. The recent Congress of the British Veterinary Association heard that post-graduate veterinary training in food safety and hygiene is funded by the state in France and several other European countries, but not in the UK.

9. As far as domestic households are concerned, there has been great inconsistency and confusion in the assessment, management and presentation of risk. Furthermore, there is little consistency on how public risk is assessed and presented between national and international authorities, though this is now seen as a high priority area. Too often food scares have been reported in terms that bear only partial resemblance to the facts. For example, in handling the BSE crisis politicians, media and pressure groups treated science as though it were either an infallible oracle or a convenient scapegoat for political failures. IPMS' 1997 Annual Delegate Conference carried a resolution greatly regretting "... the appalling level of ignorance, of the public in general and Government Ministers in particular, of even the most basic principles of the scientific method—as displayed in, for example, John Major's statements to Parliament on the BSE affair".

10. There is no doubt that lack of openness has undermined public confidence in food safety. IPMS' submission on the Food Standards Agency called for enhanced education and information, especially on matters of healthy nutrition. Although publication of the Health of the Nation White Paper marked a significant step forward, there is a need for more active intervention in the interest of public health and as a counterweight to the persuasive influence of food manufacturers and retailers. It is essential that the Food Standards Agency has a proactive role in this area. It should give consideration, in consultation with other competent bodies to the introduction of legally enforceable standards for dispensing nutritional advice to the general public. There is a need for science to be integrated into the decision-making process, whether by politicians, public or pressure groups. Mechanisms such as consensus conferences could help in promoting understanding of basic concepts of risk, probability and scientific uncertainty as well as raising awareness on specific issues. The scientific process must be as open to scrutiny as possible and, for this, a freedom of information act is essential.

Genetically Modified Organisms

11. The European Union has recently agreed to the introduction of regulations requiring genetically modified soyabeans or maize to carry special labels. This regulation, which brings soyabeans and maize into line with other novel foods, is a welcome step forward. However, it does not resolve problems of global variations in food standards and enforcement mechanisms. Recent cases involving import of genetically modified wheat from the USA illustrate difficulties which are unlikely to be easily resolved.

Conclusion

12. The case for change in order to regain public confidence in food safety can no longer be disputed. However, this needs to be carefully planned and executed to preserve and maximise the benefits of existing mechanism. Reorganisation will not, in itself, improve food safety but a Food Safety Agency working openly and effectively with industry and subject to public and Parliamentary scrutiny should do so.

15 October 1997

APPENDIX 18

Memorandum submitted by The Royal Society of Chemistry (C20)

1. The Society Welcomes the Government's Policy

The Royal Society of Chemistry welcomes the intention of the Government to dismantle the existing structure for food safety, which is widely perceived by the public at large as inadequate, and to establish a new independent food safety body.

2. Restoring Public Confidence

The Society—which is itself an entirely independent professional and scientific organisation with a commitment under its Royal Charter "to serve the public interest"—fully understands that an important objective of the Government is to restore public confidence in the system of food safety operated within the UK.

To this end the Society regards it as of vital importance that, whatever the precise details of the new arrangements, they are operated in an entirely open and transparent way. Public confidence can *only* be restored if the new independent body is both open and *seen* to be open.

3. The Society's Role in Existing Arrangements for Food Safety

The Society does have a role in the existing arrangements for food safety in respect of chemical monitoring and analysis. The Society is the qualifying body for Public Analysts, through the award of the Mastership in Chemical Analysis (MChemA) under the provisions of the Food Safety Act 1990. The Society believes that Public Analysts are as essential ingredient in any new arrangements by virtue of their high level of scientific expertise.

The Society also plays a leading role in development of National Vocational Qualifications and Scottish Vocational Qualifications, particularly at the professional scientist level.

4. The Role and Functions of the Commission/Agency

The Society broadly supports the powers, scope, role and functions envisaged for the new Commission/Agency by the *James Report.*

All the areas outlined as falling within the functions of the new Agency—including the responsibility for chemical monitoring and analysis, and the surveillance of microbiological food safety—are those which the Society would support.

However, the Society takes the view that the remit of the new Commission/Agency should not necessarily extend to issues such as the broad scientific aspects of nutrition (which should remain within the Department of Health) or labelling (which should remain within the Department of Trade and Industry) but should concentrate on those aspects which specifically relate to food safety.

5. Membership of the Food and Health Commission

If the Government proceeds to establish a Food and Health Commission to oversee the work of an independent Food Standards Agency, the Society believes it to be essential that *at least one member of such a Commission should be someone with direct experience of the fundamental chemical and biological sciences* which underpin so much of the scientific work involved in food safety. Without at least one person with such expertise, the Commission itself may not enjoy the level of public confidence—both with the public at large and within the scientific community—which it is essential for it to have if it is to succeed in its role.

6. The Staff of the Independent Food Standards Agency

The Society believes that the staff of any independent Food Standards Agency should comprise those recognised as authoritative scientific figures in their own right. The Agency should be able to draw upon those who have expertise in the fundamental biological and chemical sciences and the specialisms which are based upon them (including microbiology, toxicology, pathology and genetics).

7. The Funding of an Independent Commission and Agency

The funding arrangements for the new structure of food safety are an issue of vital importance. The Society wholeheartedly endorses the suggestion in the *James Report* that funds for food safety enforcement should be transferred from existing Government departments and disbursed by the new Commission/Agency. The ring-fencing of the sums involved, when disbursed to local authorities, will in the Society's judgement be crucial to the effectiveness with which food safety legislation can be enforced.

8. Aspects of the Operation of a Food Standards Agency

There are certain specific aspects of the likely operation of a Food Standards Agency on which the Society would at this stage like to offer these broad comments:

Licensing Arrangements

The Society takes the view that licensing should be considered for manufacturing, retail and catering. Not only would this offer the possibility of an additional source of funding for food safety but it also offers the prospect of further progress towards the highest standards of hygiene.

Research

The Society takes the view that a distinction should be drawn between the different kinds of research that accompany the new arrangements for food safety:

- Research in direct support of food safety should be within the jurisdiction of the new Commission/Agency.
- Research into aspects of food that bears on the underlying science should remain within the jurisdiction of the Research Councils (where existing funding of food-related basic research should be continued).

9. The Relationship Between the Commission/Agency and the European Union

Many important aspects of food safety now have a European dimension. Many of the food safety issues that arise within the European Union will continue to be addressed by Ministers representing the UK Government at meetings of the Council of Ministers. The Society does not envisage or recommend a direct role for the Commission/Agency in such discussions.

However, the Society does believe that *the advice which the Commission/Agency conveys to the UK Government*—in respect of all discussions about European Directives and legislation, and prior to European Ministerial meetings and all discussions and negotiations between the UK and other Member States on food safety matters—*should be open and should be published.*

10. Independent Scientific Advice to the Commission/Agency

One issue which the Society regards as of vital importance to the success of the new arrangements—whatever their precise detail—is the provision of independent scientific advice to the Commission/Agency.

In this connection the Society would like to draw attention to the role of the Office of the Government Chemist. The post of Government Chemist is of long standing and The Royal Society of Chemistry has recently taken steps to strengthen and guarantee its independence, including the formation of an independent Advisory Committee whose functions include an audit procedure to review the quality of its work and safeguard its scientific integrity.

The Government Chemist discharges an important and valued referee role in support of food regulation but also acts in a broader advisory role both for Government and for the wider analytical scientific community.

Not only does the Office of the Government Chemist have a longstanding and significant record of contributing to the advancement of chemical science—which is of obvious relevance to food safety—but the Commission/Agency might find valuable its position as independent of both the regulator and the regulated.

The Commission/Agency, which very properly will wish from the beginning to demonstrate its own independence by having access to its own independent advice, should consider the Office of the Government Chemist to be an appropriate source of independent scientific advice.

11. Independent Scientific Advice from the Commission/Agency

The *James Report* envisages that the new Commission/Agency would offer advice to a number of Ministers, both under the current system of governance and under any new arrangements which might arise under any devolution legislation.

The Society considers it essential that the advice of the Commission/Agency to the Government should be public and published, and that Ministers—were they to disagree with the Commission/Agency—would have to do so openly and in public.

12. ACCOUNTABILITY TO PARLIAMENT

The Society would also like to make some general comments about the arrangements for Parliamentary scrutiny and accountability.

Proper accountability to Parliament is an essential ingredient of the success of any new independent arrangements that are established. Without such accountability the Society believes that public confidence in the new arrangements will be weakened.

The Society considers that two particular matters will need to be addressed:

Annual Report

The Society believes that it would be in the public interest for the Food and Health Commission and the Food Standards Agency to publish an Annual Report which can be debated in Parliament, preferably also on an annual basis.

Parliamentary Scrutiny

The Society believes that arrangements should be made for the appropriate Parliamentary Select Committee(s) to conduct regular scrutiny sessions on the work of the Food and Health Commission and the Food Standards Agency, and their Parliamentary reports should also inform regular Parliamentary debate on food safety.

While the Government will obviously retain overall responsibility for food safety policy, the Society also supports the recommendation in the James Report and the Commission/Agency would be entrusted with some responsibility for drafting legislation on food safety. The Society would regard such a responsibility as a further reason why the Government should ensure that Parliament has the proper means to hold the Commission/Agency to account.

13. SPECIFIC OFFERS OF SOCIETY ASSISTANCE

The Society would like to make the following two specific offers of assistance which are designed to help in the preparations both for the draft legislation and for the detailed arrangements for the new Agency.

The Offer to Conduct a Study

The Society is prepared to assist the Select Committee by conducting a study of the deployment of scientific expertise in the food safety area, with particular reference to the qualifications of those involved and the range of skills and competencies that are required to produce an effective system of food safety enforcement. The Society believes that this could prove of real benefit as the Government proceeds to address the detail of the new arrangements and prepares the draft legislation.

The Offer to Identify Scientific Expertise

The Society would gladly assist the Select Committee in identifying scientific expertise which could be made available either to work in the new Agency, or to assist the Agency by organising meetings between the Agency and expert groups (such as the Society's own Food Chemistry Group) with the objective of providing an independent source of scientific advice when needed.

17 October 1997

APPENDIX 19

Memorandum submitted by the British Society of Plant Breeders Ltd (C21)

The British Society of Plant Breeders (BSPB) welcomes the opportunity to submit evidence to the House of Commons Agriculture Committee inquiry into food safety issues.

Our comments relate mainly to the food safety implications of genetically-modified crops, and associated issues of consumer information.

ABOUT THE SOCIETY

BSPB represents virtually all plant breeding activity in the UK. Members range from SMEs through to large international companies and public sector research organisations.

Plant breeders are an early link in the crop production chain, translating initial scientific advances into commercial seed products.

In recent decades, progress in UK plant breeding has underpinned the successful development of crop-based agriculture and horticulture in this country. By providing new crops varieties with improved agronomic and quality characteristics, Britain's plant breeders play a key-role in maintaining and enhancing the competitiveness of our food and farming industries.

PLANT BIOTECHNOLOGY

Commercial plant breeding technology has evolved in line with a more sophisticated understanding of plant science. Genetic modification (GM) is the most recent addition to the plant breeder's "tool kit", providing more precise methods to introduce desirable traits, such as disease and pest resistance, into agricultural and horticultural crops.

Still in its early stages of development, the technology offers major benefits for farmers, the food industry, consumers and the environment (see Appendix 1, *Biotechnology and Plant Breeding*, BSPB 1997) [not printed].

While no GM crops have yet been introduced commercially on UK farms, BSPB members are using these techniques in current breeding programmes. The Society supports the responsible application of GM by its members, and promotes a transparent approach to providing public information about the technology and its use.

FOOD SAFETY

There is no evidence to suggest that GM crops pose any new food safety risks. Because of the precise and controllable nature, the genetic modification of plants has been described by the Health & Safety Commission's Advisory Committee on Genetic Modification as "one of the safest technologies ever developed".

Indeed, plant breeders will increasingly be able to use the tools of biotechnology to improve food safety, for example by reducing levels of natural toxins and removing potential allergens.

Gene technology also offers the potential to improve the nutritional characteristics of food, for example by increasing the availability of beneficial substances such as vitamins and antioxidants, or by enhancing protein characteristics.

Other benefits include the potential to improve the keeping qualities of fresh produce, thereby reducing the risk of contamination through disease attack.

Enhanced pest and disease resistance in agricultural crops will also help to reduce pesticide use in food production.

REGULATION

Comprehensive regulations are already in place at UK and EU level to control the commercial introduction of novel foodstuffs, including GM products. This ensures that no GM food or feed product can be marketed until the regulatory authorities—themselves advised by independent committees of scientific experts—are satisfied that its consumption presents no adverse risk to human or animal health.

To reinforce public confidence in the technology and the responsible way in which it is being developed by plant breeders, BSPB supports the appropriate regulation of GM foodstuffs, based on the best available scientific knowledge.

We are concerned, however, that regulation should be sufficiently flexible and responsive over time to the technology's proven safety and acceptance in use. Food safety controls should increasingly be product rather than process-based, and harmonised with other approval procedures—such as consent for environmental release—to prevent unnecessary delays in bringing GM products to market.

Furthermore, international differences in the way GM products are currently approved for sale has highlighted the need for a harmonised regulatory system. Such an approach would allow all countries equal access to the technology and its benefits, and improve international trading arrangements.

CONSUMER INFORMATION

BSPB supports the provision of full and open information relating to GM crops. This will play an important role in ensuring that best practice is adopted by all those involved in the production, handling, storage, processing and marketing of these products. It is also needed to provide consumer choice and satisfy consumer demands for information about the use of GM in food production.

To that end, earlier this year BSPB joined forces with the National Farmers Union (NFU) and the United Kingdom Agricultural Supply Trade Association (UKASTA) to issue a joint Code of Practice on the transfer of information from seed to primary end-product for GM crops developed, grown and marketed in the UK (see Appendix 2, *Code of Practice on the Provision of Information Relating to Genetically Modified Crops*, BSPB, NFU & UKASTA, April 1997 [not printed]).

The aim of this Code of Practice is to promote best practice in the production and handling of GM crops, and to help raise consumer awareness and acceptance of GM foodstuffs. It provides the basis for more comprehensive, industry-wide information about GM crops from plant breeder to consumer. BSPB is working closely with organisations such as the Institute for Grocery Distribution and the Food and Drink Federation to complete the system of information transfer along the entire food supply chain.

BSPB firmly believes that modern plant biotechnology, including genetic modification, offers significant benefits for the future. We take the concerns of our customers extremely seriously, and have a genuine commitment to ensuring that this vital new technology wins the support and confidence of the consuming public.

17 October 1997

APPENDIX 20

Memorandum submitted by the National Office of Animal Health Limited (C22)

As representatives of the companies which research, develop and market animal medicines in the UK, NOAH welcomes this inquiry, and the invitation to submit evidence.

Earlier this year NOAH submitted a response to the "James Report" which proposed the establishment of a Food Standards Agency. That response is attached, in full, in an updated form, (Annex A [not printed]) as we believe the creation of that Agency is crucial to the re-establishment of public confidence in food. (We must emphasis our support for the concept, even though we have concerns about certain details).

Many of the points made in that report reflect long term NOAH policy, in particular the views expressed in our 1995 response to the Select Committee's Inquiry into the Veterinary Medicines Directorate (VMD). For ease of reference we attach extracts from that 1995 document which particularly relate to Food Safety (Annex B [not printed]).

With regard to the specific questions raised by the latest inquiry into food safety, we would particularly draw the Committee's attention to the following points:

A. *Significant gaps in understanding*

It is essential, before proposing solutions, to first establish whether there is a real problem of Food Safety, or whether the problem is actually one of Public Confidence. In this context we welcome the Inquiry's first two questions as they should help to establish whether there is actually an increase in cases of bacterial food poisoning compared to the past, or whether heightened media interest, and better reporting, has simply led to a perceived increase. (Annex A p 3–4).

Please note that we have not included comments on the question of bacterial resistance to antibiotics, and the use of antibiotics on farms, as the topic is not raised in your Inquiry agenda, but we would be pleased to respond on this subject if requested.

In our own specific area of interest we are unaware of any implications, either statistical or perceived, of food safety problems relating from the use of animal medicines in the UK. While it is sadly true that occasional problems are reported from other parts of the world, there are no such reports in the UK.

B. *Food Safety Risks on farms—Veterinary Medicines*

The published results of MAFF's regular programme of food testing indicate that the controls on residues of animal medicines in livestock produce are effective and should be reassuring to the public.

In our response to The James Report, we express a number of concerns about the proposals for animal medicines, in particular the suggestion that the new FSA should have responsibility for the "Safety" of animal medicines. As is explained in detail in our report, we believe that this separation would be a retrograde step, which appears to be based on a misunderstanding. (Annex A p 8–9). It is also essential to recognise the dominance of EU law (Annex A p 6–7, B p 6–7).

Food safety is only one aspect of Safety in the UK and EU system of licensing animal medicines—Patient (ie animal). User and Environmental Safety are also of great importance, and well covered by existing arrangements with HSE, Environment Agency and the Veterinary services (Annex B p 5–6).

The current UK system is clear, effective and understood. It provides a "one-stop-shop" which is the envy of other member states where licensing responsibilities are shared between a number of Departments. Rather than "safety" being devolved to FSA from VMD, we recommend that (like HSE & EA) FSA should have a formal/consultation role to provide specialist advice into VMD and the Licensing Authority.

In an independent 1997 "Benchmarking Study" undertaken for our EU Industry Federation—FEDESA—overregulation and unpredictability were seen as the greatest impediments to investment by international animal medicine companies in the EU—There is a danger that Professor James proposal to involve the Food Standards Agency in the licensing process could result in UK exacerbating the problem. (Annex A p 7/8/9, B p 4/5, C).

C. *The Governance of the Food Standards Agency*

May we take the opportunity to raise with the Committee our concerns over the proposals for a "Food Standards Commission".

When in opposition, the present Government made many strong and valid points about QUANGO'S and the undesirability of their being filled by political appointees. The Food Standards Commission will be a new QUANGO and it is of crucial importance that its members are drawn from all sectors which will be affected by the Agency's work. This means not only "Public Interest Groups" (undefined) but representatives of farming, food manufacturing and distribution and allied industries. Our detailed comments may be found on pages 5–6 of Appendix A [not printed].

One particular fear which arises from the proposed structure of the Food Safety Commission is that, in being dominated by "public interest groups" there will be a tendency for it to promote Regulations based, not on scientific fact but on the latest "fashion or passion". Such an approach would place Industry in an impossible position—the provision of data to support Product Authorisations is a slow and costly process which can only be justified if there is a stable and predictable Regulatory climate to indicate what work must be done, and to give assurance that the data, when submitted will be assessed to recognised, international, scientific standards. The introduction of "prejudice based" regulation should be no more acceptable for food than for any other aspect of Society, however there are grounds for believing that this could be the result if Professor James' proposals were accepted.

D. *Food Security*

The Western World has been blessed, over the past half century, with ample (occasionally embarrassing) supplies of a wide range of food stuffs. Thanks to developments in farming, veterinary and allied technologies we have food for all. This security of food supply is perhaps one of the reasons why there has been ample opportunity for those who would seek to benefit from exciting public concerns. The fact that people do not have to worry about the availability of food means they have time to worry (or be made to worry) about the "quality" of food—not only is it safe, but does it come from "acceptable" production systems?

Starvation is the ultimate denial of Food Safety. As we move into the next century there are increasing warnings about the growth of population, (currently put at 100 million new mouths per year) particularly in regions of growing prosperity such as south-east Asia. Many of the small, densely populated countries are already importing food to meet the demands of their prosperous, expanding populations. Even China is reported to be importing rice and other feed grains.

The reason we have been able to sustain the growing world population in recent years has been the success of agricultural technology. If we are to feed our people in the future then technology will also have to advance. Any measure relating to improving food safety must be proportionate to the real task and must not be so repressive that essential technological development is hampered or deterred. (Annex A—p 11, B—p 3–4)

We would be very pleased to have the opportunity to meet the Committee to give oral evidence if this would be deemed helpful.

17 October 1997

APPENDIX 21

Memorandum submitted by the Co-operative Union Ltd (C23)

Executive Summary

A. Support must be given to HACCP as the internationally accepted modern method of ensuring food safety.

B. The Food Agency's remit should include nutrition and consumer education.

C. The changing risks to food safety must be investigated and addressed. All parts of the food chain have a role in maintaining food safety.

D. Genetically modified products must be placed on the market in such a way that labelling is possible.

Our evidence covers six areas

1. Law and enforcement in the food retail sector
2. The scope of the Food Agency
3. Significant gaps in scientific understanding
4. Measures which could be taken to reduce these gaps
5. The level of risk in the food chain
6. Genetically modified foods

The Co-operative Union is the association of 41 independent Co-operative Societies in the UK which operate as retailers and which are owned by their consumer members.

1. Law and Enforcement in the Food Retail Sector

The General Food Hygiene Directive 93/43

The Directive introduced a radical change to UK food safety law—the requirement for food businesses to implement HACCP (Hazards Analysis and Critical Control Points).

The crucial significance of HACCP is that it focuses on the responsibility of the trader to prevent risks to consumer safety rather than on the ability of the enforcement officer to detect them. It focuses on procedure not prescription.

Many of the procedures which have to be undertaken under a HACCP system—cleaning schedules for example—will already be part of good business practice. The difference is the change in the culture: the sharing of responsibility for hygiene and safety throughout the food chain rather than the emphasis on end-product testing.

HACCP was developed in the United States in order to guarantee that astronauts' food was absolutely safe and would not jeopardise missions by causing digestive upsets. It has been adopted by the Codex Alimentarius Commission and is now accepted internationally as the modern way to ensure food safety.

HACCP obliges the trader him/herself to examine every step of their food operation. It requires them to identify those which are critical to food safety. It requires them to establish the control and monitoring measures necessary to minimise the risks at these points. It requires them to determine the corrective action to be taken when problems arise.

HACCP obliges staff themselves to be aware of the risks in food handling and of the reasons for the procedures that they are being made to follow. It requires them to concentrate on supplying safe food rather than just on complying with the law.

HACCP enables traders to meet new needs and to accommodate change. It allows them to deal with the problems presented by premises which have not been custom-built. This is particularly important for the Co-operative Movement since many of our premises are old, indeed some are listed buildings.

HACCP is a very new requirement and its introduction is taking a considerable amount of time and effort—less on the identification of critical points in our operation than on the establishment of the procedures and documentation to be followed. And the time commitment has to be on-going since HACCP systems must be under constant review.

Much of that time has to be spent on developing procedures and documentation which are simple but effective. There is no point in drawing up procedures which cannot be understood by staff, or which cannot be remembered easily by staff, or which are so complicated that staff are tempted to cut corners. HACCP is a people-centred operation so it has to be made user-friendly for staff at all levels, and its management has to be undertaken in co-operation with staff at all levels.

HACCP can appear very daunting to small companies and small stores. It is very important that small traders should not be frightened into spending large sums of money on buying in expertise when they could devise their own systems. Government and enforcement officers should help them to implement HACCP and to build on the best practice of the larger and more experienced operators.

One very effective way of doing this is through the Retailers' Guide to Good Hygiene Practice which is provided for under the Directive. Retailers are pressing for its publication and it is very unfortunate that its progress has been held up in the Department of Health.

The new enforcement burdens

We should make it absolutely clear that HACCP is not a replacement for enforcement. It is not, as is sometimes perceived, self-control instead of external control. And neither is it a means of evading control by enforcement officers.

HACCP systems have to be approved by enforcement officers and enforcement officers have to inspect the system as often and as rigorously as they do other compliance operations.

However HACCP is a new concept in UK law and it requires different, and perhaps more sophisticated, expertise and judgment on the part of enforcement officers.

HACCP also requires a high level of co-operation between enforcement officers and traders in order to devise, and in order to run, the best and the most effective system. What is needed is co-operation in an atmosphere of constructive tension.

We support the retention of enforcement at local level but enforcement authorities cover a very wide range of issues and only a few officers are available to focus on HACCP. We are therefore very concerned about the fragmentation of expertise that has inevitably arisen because of the change to unitary local government authorities. The skill levels required are getting greater while the enforcement units are getting smaller.

2. FOOD STANDARDS AGENCY

The Co-operative Union welcomes the proposal to establish a Food Agency. We believe that the establishment of an Agency will go a long way to restore consumer confidence, to provide a more stable environment for the food industry, and to dispel the view that existing Ministries respond more to producer interests than to the public interest.

We feel strongly that the Agency must be given a wide but well-defined remit, that it must have the powers to act, and that it must have a voice which is independent, and seen to be independent, of Government.

Its Consumer Protection Mission must not just include addressing safety issues but also the other responsibilities listed in the James Report—nutrition, the aspects of animal health which affect food, food labelling and standards, and consumer education.

Indeed we consider that the Agency's remit should include the environmental impact of food policy, the impact of animal nutrition on health, and the impact of agricultural practices on food safety.

The Agency should not take any enforcement powers from local government but should monitor the work of local enforcement.

3. SIGNIFICANT GAPS IN CURRENT SCIENTIFIC UNDERSTANDING OF FOOD SAFETY ISSUES

(a) *Ecoli* O157

Unresolved questions include the potential survival of the organism both in nature and in different types of foods. Does the organism remain viable in uncooked cured and fermented products? Does it survive in soil? Why are food poisoning outbreaks from *Ecoli* 0157 more prevalent in Scotland than in the rest of the UK? The answers to questions like these will determine the action taken on the recommendations of the Pennington Committee, on the use of manures and sewage sludge, on the handling and consumption of raw fruit and vegetables.

(b) *BSE*

The cause of BSE remains a matter of speculation as does its potential harm to humans and its implication in the new variant of CJD. What caused spongiform encephalopathies to cross species barriers? And does this have implications for scrapie in sheep?

(c) *Other emerging pathogens*

Yersinia enterocolitica and small round viruses are potentially hazardous and more information is needed on the infective dose, its resistance or survival after undergoing food processing techniques, and potential contamination routes.

(d) *Contaminants*

There is a paucity of information about mycotoxin contamination in foods other than the (well documented) aflatoxins in nuts and milk. Nitrate levels in fresh produce are not well documented. Nor is the risk of increased levels of nitrate in foods. More toxicological and epidemiological work is needed in order to determine the precise risks from chemical contaminants. Lack of concrete information has hindered the UK from making a defensible case to challenge EU proposals to impose limits.

(e) *Packaging materials*

Despite the extensive programme of MAFF research there are still unanswered questions. Materials are discovered to migrate from packaging materials with potentially dangerous effects—tin levels into certain canned foods, bisphenol A diglycidyl ether into fatty foods, phthalates from plastics into baby milks.

(f) *Environmental pollutants*

The effects on foods are largely unknown.

(g) *Chemicals in foods and formed during food processing*

Knowledge is continually expanding and established views on the safety of foods and food processes are being challenged. This can be illustrated by the current investigations into chloropropanols. Initially it appeared to be a problem associated with a particular method of preparation but now it seems to be a more widespread problem with potentially significant implications across the food industry. The current toxicological data is neither extensive nor robust.

As analytical methods improve the ability to detect chemicals at ever smaller concentrations increases. As more and more is known about the potentially adverse effects of particular chemicals it becomes less and less acceptable to use the limit of detection as a control level.

4. Measures Which Could Be Taken To Reduce These Gaps

(a) *Monitoring of changes in dietary patterns*

It is the level at which substances are present in the total diet that determines whether they are harmful. The information needed therefore is the level of a potential toxicant which provokes an adverse reaction and how nearly that level is reached in the total diet.

Good up-to-date information is required about dietary patterns. This country has extensive records of dietary surveillance but there are gaps, as has been highlighted recently in the question of canthaxanthin in the diet (resulting from farmed salmon, farmed trout and eggs). The gaps seem largely to relate to consumers with special needs and to specific types of product.

Information will be needed on changes to dietary patterns caused by the consumption of "functional foods" and genetically modified foods especially where these are consumed by particular groups. The market in functional foods may for example lead to an increased consumption of vitamins and minerals.

(b) *Surveillance*

Much surveillance work is undertaken by MAFF and this provides useful background information. We are concerned however that it could be prejudiced by the publication of brand names since this will mean that more resources are devoted to individual studies in order to ensure that samples are representative of the market place. It would be highly detrimental if this reduced the number and types of surveillance undertaken.

(c) *Review of acceptable daily intakes (ADI)*

A review is needed of intakes in the early years of life. The ADI is proportionate to body weight and is therefore much lower for babies and children. ADIs have been exceeded in products which are consumed regularly by young consumers: organophosphorous in carrots; pesticide in apples; canthaxanthin in eggs. The long-term consequences of excessive intakes in children are not known.

5. The Level of Food Safety at Risk in the Human Food Chain

On Farm

(a) *Product liability*

We support the extension of product liability legislation to primary produce as the single measure most able bring the farm under the same rules as the rest of the food chain.

(b) *Traceability*

Systems of traceability are common-place throughout the rest of the food chain but have, until recently, been neglected as far as farm produce is concerned. The BSE issue has led to the establishment of the cattle database. Similar systems need to be developed for other species and for produce.

(c) *Feedstuffs*

The feedstuffs industry must be as rigorous in its procedures as the foodstuffs industry both in the ingredients used and in processing techniques. The BSE issue has raised concerns about the desirability of feeding animal remains to animals, of feeding animal remains to fish, of feeding fish remains to animals. There are problems of contamination, particularly where bad practice leads to low levels of veterinary medicine residues in meat.

(d) *Agrochemicals*

Their presence in foods, even below maximum residue limits, is now seen as unnecessarily prejudicing human safety. Encouragement should be given to farm practices which eliminate the use of agrochemicals. Systems should also be developed which minimise their use, Integrated Crop Management for example. Data should be gathered in order to compare yields and chemical inputs between conventional and genetically modified crops.

(e) *Veterinary medicines*

There are questions of animal and human health, particularly with regard to antibiotic resistance. Research should be undertaken on how to reduce usage to a minimum. Alternatives should be sought, particularly with regard to prophylactic uses such as growth promoters.

(f) *Sewage sludge*

Applications for disposal on land are likely to increase in 1998 when disposal to sea is no longer permitted.

We recognise that applications to land will meet best environmental practice but we are concerned about food safety. We are not at all convinced that it is acceptable to apply untreated materials to food crops. We incline to the view that restrictions should be placed on use on crops intended for direct human consumption (ie horticultural crops), not just on products intended to be eaten raw. Careful and regular monitoring will be necessary in order to prevent contamination; this is not currently required. More research is needed into the survival of pathogens in treatments and soil.

(g) *Agricultural wastes*

The use on food crops deserves further scrutiny. More research into the processing methods for such waste would increase confidence in its use as a fertiliser on crops for human consumption.

In transit

Maintaining the cold chain is critical to maintaining the safety of chilled and frozen foods. But this has implications for the environment because of increased energy use and the resulting pollution particularly of "green house" gases. Improvements in super insulation and work on alternatives to present systems would be valuable.

At slaughter

We welcome the tightening of controls and inspection in abattoirs and the proposal to publish hygiene assessment scores (HAS). More work is needed to examine ways of decontaminating carcases. Food safety must of course take priority in abbatoirs but we feel that it must be balanced against environmental and animal welfare considerations.

In the food processing industry

(a) *Additives*

Current knowledge on the safety of individual additives is reassuring but doubts remain over the synergistic effects of a cocktail of additives in the diet.

(b) *Allergenicity*

This appears to be an increasing problem. More information is needed on the many common allergens which are found in foods and food ingredients and particularly on which derivatives of allergenic foods provoke an allergic response and at what level.

It can be difficult for consumers to avoid particular allergens when they are contained in foods as a result of their use as carriers or processing aids. There is therefore a need for flavour houses and additive companies to be more open about the ingredients they use in blends and mixes and for this information to be passed up the food chain. It would, for example, be helpful to have positive lists of permitted processing aids, carriers and similar substances.

(c) *Enzymes*

We are very concerned that there are no formal requirements for safety clearance prior to use. Nowadays, when enzymes can be sourced from a variety of origins and may be genetically modified, we believe that it is necessary to examine and lay down appropriate safety parameters including purity criteria.

In the food retail sector

The challenge for retailers is in maintaining a safe product. The key safety issues to be addressed are the prevention of cross-contamination and the maintenance of temperature controls. The effective implementation of HACCP is crucial.

In the catering industry

The fact that it can be difficult for caterers to comply with laws is not a reason to grant them exemptions and to prejudice consumer safety. Catering operations should meet the same rules as the rest of the food chain on hygiene standards, cross-contamination and allergic reactions. They should also meet rules on labelling since these impact on consumer safety by informing about safety risks.

In domestic households

Consumers have a responsibility to maintain safe food particularly with regard to hygiene and cross-contamination. They must not be led to believe food carries no safety risk. They must understand where the risks occur and what they can do to reduce them.

(a) *Education*

We strongly support the inclusion of food safety as a core subject in the National Curriculum. A knowledge of food, where it comes from, how it is processed, as well as how it must be handled by consumers, is essential if consumers are to exercise their right of choice and to play their part in minimising risks.

(b) *Communication*

Much of the material that is currently available is aimed at the educated consumer. The whole range of consumers' abilities and interests must be addressed. This is particularly important for confirming safety messages. Clear and concise messages, often repeated, are the most effective communication: essential advice should be formulated in "sound bites" and opportunities for repetition should be found. These messages should be repeated by all parts of the food chain, but especially by groups which consumers are known to trust.

(c) *Labelling*

We are concerned that essential consumer information may be diluted by the plethora of information required on labels. We support MAFF in their view that a review of EU labelling law is required. We consider that the information on the label should be directed at consumers and not at the trade. An example is storage advice where labels may carry a number of temperatures other than that directed at the consumer.

6. GM Foods

Labelling

The Co-operative Wholesale Society (CWS) was the first retailer in Europe to label a food as "produced using gene technology". Since January 1994 Co-op own-brand vegetarian cheeses have carried this information on the label on the front of the pack. The label also declared why the gene technology had been used—"and so free from animal rennet". Sales have risen so it is clear that if we are not afraid to label the product then our customers are not afraid to buy it.

CWS was also the first British retailer to adopt a policy on Genetically Modified foods and ingredients. This reaffirmed CWS's commitment to labelling products or ingredients which had been genetically modified.

However this commitment to consumers has been drastically undermined by the refusal of the producers to segregate the soya crop and by the rapidly increasing difficulties of guaranteeing supplies of unmodified soya.

We do not accept the argument that this is not possible to segregate commodity crops. It is totally unacceptable that a few companies, with support from Governments, should be allowed to dictate the conditions under which genetically modified products are sold.

Given the rising percentage of genetically modified soya in the world crop, the chances are that any supplies which are not certified GM-free do in fact contain GM soya. Under these circumstances CWS have decided that, where they cannot be certified GM-free, all own-brand products containing soya or soya derivatives will declare on the label that they "contain" genetically modified material and the reason for the genetic modification. As responsible retailers CWS considers that putting "may contain" GM soya on these products is no help to consumers.

Safety

There are strong grounds for employing the precautionary principle and for banning products where safety is in question. We therefore challenge the approval given to Novartis GM maize.

Genetically modified products are very new and there may be safety problems which only come to light in the longer term. For this reason, as well as that of customer choice, we advocate systems of traceability and of labelling. Surveillance is needed in order to highlight any untoward effects. Dietary intakes must be monitored with regard to genetically modified foods and ingredients not significantly equivalent to their unmodified counterparts.

17 October 1997

APPENDIX 22

Memorandum submitted by the Transport & General Workers' Union (T&G) (C25)

We welcome the opportunity to submit evidence to the Agricultural Committee and are pleased that the Committee is approaching the issue of food safety by looking at all stages of the food chain. We believe that an approach that incorporates on farm practices is important in raising key issues relevant to all stages of the food chain. The T&G has members at every stage of the food chain and we are particularly concerned about issues related to food safety. Because of our awareness of the complexity of the range of factors involved in Food Safety, in September 1997 we held a major conference on Food Safety and hosted a wide ranging debate. In attendance were key speakers representing consumers, unions, manufacturers and retailers that included Professor James and EU Commissioner Franz Fischler. The Conference debated a wide range of issues relevant to both food safety and food standards, ranging from the structure and remit of the new Food Standards Agency to concerns about Genetically Modified Organisms. It is clear that consumer concerns about food safety need to be translated into positive action being taken at all stages of the food chain to improve safety standards and enhance transparency about the content and processes involved in food production.

A key element of any changes will be the role of employees whether this be those working on farms, delivering produce, working on production lines, or counters at retail outlets. In our view, health and safety at work is an integral part of food safety standards and there needs to be detailed consideration of standards, enforcement and the training provided to employees to ensure an improved quality of food standards and food safety. For ease of reference our evidence will follow the areas outlined in your consultation paper as follows:

1. Recent Trends in the Incidence of Bacterial Food Poisoning in the UK, and the Effectiveness of the System of Notifying Cases of Food Poisoning

We are aware that notifications of food poisoning have continually increased in recent decades. This leap is a serious cause for concern as notifications rose from 20,702 in 1984 to 82,132 in 1995, representing an increase of 395 per cent during this period. Given that these figures are only those that reach the formal notification stage, it is realistic to recognise that the actual number of cases is significantly higher than this. Recent scares about *Ecoli* 0157 are clearly linked to the large increase in cases, rising from 80 in 1985 to 1,039 by 1995. Consumer alarm about food safety is recognising a problem that needs to be tackled at all stages of the food chain and we do believe that animal welfare practices should form a significant part of such enquiries.

We are concerned that intensive agriculture has led to adverse welfare implications for animals and had detrimental effects on public health. Many of our members work directly with animals and there has been a growing concern among them, about the regular use of antibiotics as part of day to day animal care practices. That in turn, has raised concern about the impact on human health of consuming animals reared on antibiotics. The increased use of antibiotics in animal husbandry has simultaneously been accompanied by a growth of food poisoning in the general population. The connection between animal husbandry practices and food poisoning should in our view, be investigated by detailed research.

We are aware that a 1994 survey by the Public Health Laboratory Service found 41 per cent of UK produced frozen chickens to be infected with Salmonella. A sample survey by Which in 1996, also found that half the chickens to be contaminated with either salmonella or campylobacter. Compassion in World Farming Trust has also produced a detailed report which identifies the public health implications and economic costs of intensive animal husbandry systems. We have found the evidence they have compiled compelling and believe that any serious investigation into the explosion of food poisoning cases in recent years must consider the conditions under which animals are kept and that impact on the quality of food purchased by consumers.

Finally, in terms of the effectiveness of the system of notifying cases of food poisoning, most members of the public would be completely unaware what the system for notification was. We would suggest that a large scale public education exercise alerting the public to the symptoms and dangers of food poisoning would be appropriate.

2. Significant Gaps in Current Scientific Understanding of, and Statistical Information on, Food Safety Issues, and Measures Which Could be Taken to Reduce These Gaps

The main point that we would like to enforce in relation to this section, is the need for public access to information and for information to be disseminated in a format that is easily understandable to the lay person. We recognise that the Government wants to encourage more openness and we welcomed the decision by the Minister in July to provide the brand names of products tested in food surveys.

The public should not have to rely on organisations such as Which to purchase food from supermarkets, subject them to tests and then publicise the results. There should be regular information published about routine testing of foods in supermarkets in a way that will reach a wide audience. In addition, consideration should be given to require supermarkets, who carry out a wide range of internal tests, to provide information to consumers about the results of their own tests.

3. The Level of Food Safety Risk at All Stages of the Human Food Chain

A key issue for the T&G is the requirements there should be for proper food safety training of all employees. There needs to be a systematic programme ensuring coverage for workers at all stages of the food production chain. This is not currently the case.

Food Safety Risks on Farm

In many ways farmworkers are in the front-line with regard to working practices which only years later are acknowledged to be a problem. This can range from dealing with chemicals and all the health issues that have arisen from the use of Organophosphate Sheep dips, to zoonotic diseases arising from working with animals and the concerns that arose from the BSE crisis and in relation to CJD.

One issue, for example, which arose during the BSE crisis was the need for all animal feedstuffs to be clearly labelled to enable those handling such feedstuffs to know the actual contents. In addition, there should also be a requirement for the identification of the percentage of each ingredient used in the feed. We are firmly of the view that feed labelling should be a legal requirement and not left to voluntary action by some producers.

In our view, the issue of sustainable agriculture is a key element in any consideration of food safety. One area where this raises important questions is in relation to the lack of BSE cases on organic farms. The Soil Association banned the feeding of all animal proteins to cattle and sheep in 1983. They have subsequently undertaken a survey into BSE on organic farms which revealed that there was no recorded case of BSE in any herd which was managed organically since before 1985 and where no animals had been brought in subseqently from outside sources. This situation highlights the hidden costs of intensive farming compared to sustainable farming methods.

Consideration of agricultural practices is a key element in consideration of food safety and food standards. The intensification of animal production can be clearly seen from the fact that 76 per cent of laying fowls are in flocks of 20,000 and over. With broilers, 55.1 per cent are in flocks of 100,000 or over. This pattern is repeated with pigs, where 65.1 per cent are in herds of 1,000 or over.

The health and safety record of the agricultural industry is appalling. This must be tackled if serious attempts are to be made to improve food safety. More than one person is dying every week in Agriculture. In the 12 months to 1997, 63 people were killed and this included eight children. There is a clear lack of management of health and safety risks which does not reflect well on the industry. In addition, if the health of those working in the food chain is at high risk, what are the implications for food safety in the workplace.

The whole area of training to eliminate health & safety risks and the monitoring of this needs a fresh approach along the whole of the food chain. The T&G has been operating a pilot roving safety reps scheme, part-funded by the EU. But, we have been unable to gain support for a National scheme from the employers. This highlights the difficulty of achieving safety gains without a legislative framework ensuring the rights of health and safety representatives on farms.

Food Safety Risks in Transit

Many of our members work directly with animals and have therefore, a very particular interest in animal welfare. The support recently given by the Government, to the adoption of a legally binding Protocol to be added to the Treaty of Rome recognising that animals are sentient beings was a welcome step.

The policy of the T&G is that animals should be killed as near to their place of origin as possible. We are very concerned about the constant contraction of the abattoir industry which necessitates greater travel requirements. The longer any animal has to travel the greater the scope for distress, illness and unhealthy conditions to develop. The issue of animal disposal is one that needs careful investigation and the possibility of supporting mobile travelling abattoirs should be considered as one way of moving away from the continual contraction in the number of abattoirs.

We welcomed the Governments preference for meat to be exported on the hook, rather than on the hoof but this will require action to make it a reality.

Food Safety Risks at Slaughter

The position of abattoirs in the food production process is pivotal. Fierce competition between abattoirs has meant savage cost cutting and this is a difficult climate in which to place an emphasis on quality and safety standards. It is only recently that agreement has been reached for the voluntary introduction of hazard analysis as a critical control point system in all abattoirs. At present, the aim is to introduce this by the end of next year. We are very concerned that the emphasis on voluntary codes will be insufficient. Given the enormous public health and financial costs of BSE we are very wary of supporting a voluntary approach to any stage of the food production chain, but particularly one that is so vital as abattoirs.

Food Safety in the Food Processing, Retail and Catering Sectors

There is a clear need in the food production process for inspections to be undertaken that are unannounced, with a right of immediate access to all processes. There is in our view, limited value in rare "Royal visits" where several days notice is given and temporary clean ups can be undertaken that give a completely false impression about the levels of food hygiene. Inspectors should also be able to meet freely with trade union representatives.

Because of the pressure for profitability there can be a conflict with food safety standards. We are aware of an increasing number of companies seeking to impose confidentiality clauses in workers contracts which forbid them to speak to people outside the company on matters of concern. We believe that there should be hotlines that employees can ring in confidence when food safety hazards are being ignored and that gagging clauses in contracts that relate to any area of health and safety should be illegal.

Clear lines of responsibility and sufficient resources will be critical in ensuring that enforcement is meaningful. We saw too clearly in the BSE crisis that the implementation of changed regulations was in itself insufficient to prevent abuses and breaches. It is only when it is clear that breaches of food safety regulations will be financially stringent and uneconomic, that sustained improvements will be made by those who are not prepared to seek out best practice by their own volition.

Competition to produce at the lowest cost can have an impact on food quality. This can lead to the use of poor quality raw materials, the use of untrained and unskilled workers and the taking of unhealthy short cuts in the production process. Poor working conditions, unhygienic practices and high labour turnover will have a negative impact on both food quality and food safety. We believe that minimum training standards for all workers in the food chain should be met before a worker is allowed to handle or process food.

Food Safety in Domestic Households

There are clear questions in relation to food standards that arise that go beyond food safety when considering nutritional food standards. It is often assumed that in the UK people can choose what they eat, but lack of money very much influences nutritional choices. There is a particular need to consider the situation with regard to children and the quality of school meals. There should be national nutritional standards for school meals. In addition, the extent to which food skills are taught at school is another key issue which needs exploration.

The general public is dependent on food manufacturers providing them with critical information about the food content of products and also the nutritional content. At the recent Food Safey Conference held by the T&G, concerns were raised about misleading labelling which actually confused rather informed consumers about the actual contents of products. This whole area is on which needs very careful consideration. Consumers that are denied access to information are quite rightly irritated when informed in a food crisis, that domestic cleanliness might be a problem. In addition, there are increasing numbers of elderly people living on their own and care in the community has meant that many have to fend for themselves. Many will purchase prepared meals which need reheating but they have no control over the content or quality of the food. Food standards must be set that incorporate changing consumption patterns and the dangers that these involve particularly to vulnerable groups such as the elderly and children.

A general public food education programme would be welcome. We currently have a situation that consumer concerns about being met by a range of different retailers offering their own quality programmes. But, there is no uniformity of standards and no way that consumers can be confident about quality standards being subject to an independent process. There does need to be consistency of approach in this area as this is currently lacking.

4. Any Food Safety Implications of the Presence of Genetically-Modified Organisms in the Human Food Chain, and the Desirability and Feasibility of Labelling Foodstuffs Containing Genetically-Modified Organisms

Having experienced the BSE crisis and now with a new Government moving toward greater transparency and recognising consumer concerns about food safety, the issue of GMOs raises major issues in relation to consumer choice.

It was clear at our Food Safety Conference that many people have major concerns about the development of GMOs. What is of particular concern, is that consumers are already eating food from GMOs because of the prevalence of soya in many processed foods. We believe that it is vital that labelling of all GMO foods is required. At present the lobbying power of US Companies such as Monsanto, maker of the herbicide Roundup and Roundup Ready genetically modified soya beans, has far too much power to influence world food markets. It has, for example, recently been reported that US agribusiness organisations wrote to President Clinton demanding that the US reject EU demands for labelling of genetically engineered commodity crops.

There is also another dimension that people wish to raise in connection with Genetically Modified Organisms and that is an ethical dimension. In a recent European survey, 53 per cent believed that current regulations were insufficient to protect people from the risks of biotechnology, but the survey also found that moral beliefs are more important in determining peoples views on the specific application of biotechnology. This view was echoed at our Food Safety Conference where questions about the ethical desirability of genetically modified crops and animals was raised. The ethical questions involved in genetically modified animals are huge and the evidence of no harm is not established to the satisfaction of many NGO's and consumer groups.

16 October 1997

APPENDIX 23

Memorandum submitted by the Royal Institute of Public Health and Hygiene (C26)

SUMMARY

1. The Royal Institute welcomes projected moves to co-ordinate standards, awareness and fair enforcement of food safety and has the capacity to play a useful part (1).

2. Further work is needed to assist the PHLS and its CDSC to improve efficiency, techniques and public co-operation in the reporting of cases and incidences of foodborne illness (2).

3. Research and greater urgency are needed to anticipate and prevent infections from emerging resistant and/or dangerous pathogens through livestock (3) or innovative farming practices (7).

4. Public attention is rightly focused upon *Ecoli* 0157, its frequency and the measures needed to avoid infection from even low doses of the organism. At this point it is vital to ensure that lessons learned are applied without delay to identify and prevent other VTECs (4).

5. Infections from campylobacter are significantly high but poorly understood. More research is needed to combat this threat. Equally, the confidence of the public could be easier to sustain, if more were known about the threat from parasites in food and water (5 and 6).

6. The proposal by the EU that the liability to produce safe food be extended to the producer on the farm could prove unworkable. The concept of "protected food production environments" could be easier to communicate to the producer and could be self enforcing (8).

7. There is an urgent need at all levels of government to take better account of scientific advice when preparing legislation (9).

8. Producers in the farming industry must be encouraged to improve upon hygienic handling practices. The scientific analysis of hazards and their prevention as contained in HACCP must be adopted with greater vigour than hitherto (10).

9. Food safety awareness is a prerequisite for understanding the need for hygienic food preparation. Much training is carried out, but outbreaks of food poisoning are increasing. The Government should give high priority to an examination of the integrity of the present framework of food hygiene training (11).

10. Food safety is more likely to be assured if those producing or preparing food are motivated to adopt safe practices. Government should do more to increase the motivation of proprietors and managers of food businesses to learn about food safety. This could best be achieved by introducing a statutory requirement to obtain a suitable qualification in food safety (12).

11. Safe food handling should be recognised as an important life skill. It should be included in the school curriculum for all children, for primary age and older (13).

12. If a main purpose of the proposed Food Standards Agency (FSA) is to foster public confidence, it should develop a means of disseminating information on levels of risks and methods of reducing them (14). Similarly, it could provide authoritative information on issues of public concern and, when necessary, provide timely reminders to combat any slide into complacency (15).

13. It is not enough to wait for industry to accept and introduce HACCP hygiene management in its own time. The Royal Institute believes that a programme of training to accelerate the pace of its adoption is an essential component of any programme to restore public confidence in businesses which supply high risk foods (16).

14. A national standardised inspection and marking scheme, related to HACCP procedures, could give focus to food authorities and food safety programmes and support the UK Industry Guides to Good Hygiene Practice (17).

15. The expression HACCP should be accepted and not regarded as a "no go area" for the catering and hospitality sectors (18).

16. The Royal Institute hopes that the proposed FSA will support the WHO concept of Shared Responsibility (19).

17. As it develops the role and functions of the proposed FSA, Government must show a clear line of responsibility to ministerial level, and an overriding commitment to the public health (20).

1. General

1.1 The Royal Institute wishes to emphasise the need for commitment to food safety at every stage in the food chain. It is important to note that there can be no simple formula for ensuring food safety. The aspects of food safety are many and require the active collaboration of different specialised areas. The role of the general public is also significant for the prevention of foodborne disease. It is clear, however, that action to achieve food safety needs co-ordination, a policy and defined standards, a comprehensive and effective educational and training framework and a fair system of enforcement.

1.2 For many decades the Royal Institute has been an internationally established independent Awarding Body in the field of food safety. It has long experience of setting and achieving high quality standards of training in awareness of food hygiene and safety. In the UK training in food hygiene awareness is unregulated and in danger of falling into disrepute. The Royal Institute is convinced that a national framework of awareness training and education is essential. In this field the Royal Institute has much to offer, both on the creation and management of a national training framework and on training to achieve specific skills and knowledge.

2. The Investigation of Foodborne Illness

2.1 Through the work of the Public Health Laboratory Service and the epidemiological and laboratory services in Scotland and Northern Ireland, the UK is in a good position to overview problems and developments in microbiological food poisoning. Generally, good links between the Government Departments, local authorities, epidemiologists and laboratories so that the infrastructure for investigation and control is sound.

2.2 However, improvement is still needed in the reporting of cases and incidences which are dealt with by laboratories to ensure that all available UK figures are incorporated into the national data.

2.3 Current data on food poisoning is only representative and concentrates on outbreaks rather than individual cases. Many instances of diarrhoea and vomiting are not reported by the persons affected, even where they may suspect an association with food consumed.

2.4 When patients consult doctors, there is no guarantee that stool cultures will be taken for examination, or if they are, that all laboratories will examine them for the same pathogens. Techniques which can aid investigation, such as the judicious use of sewer swabbing, are not often employed. Comprehensive or standard procedures for investigation cannot therefore be said to apply. The PHLS and its Communicable Disease Surveillance Centre (CDSC) have taken initiatives to improve this situation and it is hoped that the Food Standards Agency will provide a stimulus and support for their work.

3. BACTERIAL INFECTIONS

3.1 The Institute is concerned at the rise of serious infectious pathogens in livestock. Toxin producing infectious pathogens and drug resistant pathogens pose serious risks to food consumers. A real concern is that the genes which code the toxins in *Ecoli* 0157 (for example) could spread to harmless commensal organisms such that new pathogens will emerge.

3.2 Drug resistant *Salmonella typhimurium* (and other strains of *Salmonella*) are appearing in the animal chain and give rise to concern that this could be the next major issue to face the food industry. There is a need to understand the ways in which this genetic material can be transferred from animal to animal.

3.3 Strategies need to be devised which will eliminate these pathogens from the food chain. Microbiological intercourse between toxigenic organisms and commensals may be influenced by modern farming practices which require investigation.

4. ECOLI 0157

4.1 A number of questions still have to be answered. Is the organism, for some reason, more prevalent in UK cattle, or is the apparent increase of infections due to better reporting, greater awareness and improved laboratory techniques.

4.2 The parts played in exacerbating the nature of the organism by individual poor handling practices and poor hygiene in retail food premises—particularly butchers shops, require examination.

4.3 As infection appears to result from the ingestion of a low dose of the organisms, emphasis needs to be placed more on hygienic handling than on temperature control of meat and meat products.

4.4 Attention is currently being focused on *Ecoli* 0157, but are other VTECS being missed. The enteroaggregates may be playing a role in gastro-intestinal infections within the community.

5. CAMPYLOBACTER

5.1 Many thousands of sporadic infections by this organism occur each year. What is not known is why the pattern of infection is individual cases rather than the defined outbreaks associated with other foodborne infections.

6. PARASITES

6.1 Reported problems in the USA concerning Cyclospora in raspberries and basil, as well as a Cryptosporidium outbreak closer to home, provide a reminder that it is time to consider seriously whether more attention should be paid to the presence of parasites in foods and water.

7. EXAMPLE OF BSE

7.1 The disaster of BSE has indicated that past awareness by Government, of what happens on the farm and the implications for food safety, has been sadly deficient. Investigative and research steps need to be reviewed to ensure that future microbiological problems do not develop from avoidable farm practices.

8. PROTECTED FOOD PRODUCTION ENVIRONMENT

8.1 In the recent EU Green Paper on future food law, the concept of extending product liability to raw farm produce has been put forward. Bearing in mind the nature of modern farming and the essential role of farmers as rural employers and conservers of environmental standards, it does not seem a practical solution and will likely win little support from politicians representing farming communities in the EU.

8.2 What could be conceived is that where raw food ingredients are harvested and produced a concept of "protected food production environment" is developed. This would mirror the approach already embodied in EU Directives on shellfish where the safety of molluscs depend on the quality of the harvesting area of seawater from which they are collected.

8.3 As much farm produce is now sold through multiple retail outlets either in raw or processed forms, end product safety is more likely to be dependent on the commercial contracting arrangements between farmers, distributors and retailers using "due diligence" concepts.

8.4 If farmers' products are suspected of being unsafe because they have originated from contaminated or unprotected situations or environments, they will have no buyers. Making them aware of this is likely to prove more practical and beneficial to the cause of food safety than introducing the complexities of product liability legislation.

9. PREVENTING CONTAMINATION THROUGH LEGISLATION

9.1 It appears that the EU Member States, including the UK, have not yet grasped the principle that for every food contamination there is a cause. At the recent sixth annual European Food Law Conference in Brussels a spokesman from the EU Commission DG VI stated that there was no existing provision in EU fresh meat hygiene legislation for animals to be clean before they go for slaughter.

9.2 In the light of the *Ecoli* 0157 experience, it is perhaps easy to be wise after the event. However, although the guidance of Codex Alimentarius has been available for over 40 years, together with growing experience of hygiene legislation at European Community and domestic levels, this statement represents an indictment of the scientific advice behind legislation.

10. PREVENTION OF FOOD CONTAMINATION BY PRACTICES

10.1 The US have adopted an enlightened approach to the problem of Listeria in dairy plants. Because Listeria is widespread in the farm and milk environment generally, they have accepted firstly, that the organism is present. Then, through scientific investigation of the plant, the locus of the organism and its most likely focal points are determined. Cleaning and disinfecting arrangements are also put in place to ensure, at least, that the organism is not disseminated throughout the plant, if not destroyed.

10.2 These are the types of thought processes which need to be applied to food production in general and which are present in HACCP. Sadly, too often in the UK, the past philosophy has been that food safety and hygiene is a matter for outside rather than inside the farm gate. BSE has undoubtedly changed that view but the problems of microbiological contamination of the food supply being addressed at the farm have not yet been grasped.

10.3 Similarly in premises preparing food, cross contamination risks from contaminated raw products such as poultry or vegetables are still not fully appreciated and separate procedures for raw and cooked products are still absent in many establishments.

11. ROLE AND EFFECTIVENESS OF EDUCATION

11.1 The Royal Institute is an educational body on public health and food safety issues. It is concerned that despite the substantial take-up of food hygiene training courses which has occurred in the UK over the last 20 years, the food poisoning statistics do not show improvement. Many of the outbreaks of food poisoning arise from commercial or domestic catering operations.

11.2 Despite an increase in public awareness and improved reporting of outbreaks and sporadic cases, the scientists maintain that the increase is "real" and related to the extent of food contamination which is exacerbated by poor food handling by individuals.

11.3 The proposed Food Standards Agency will have an education and information role. We suggest that a priority function should be to examine the integrity of the present national framework of food hygiene training and the dissemination of public information on food safety. Very little research information is available as to whether the training and information dissemination actually achieves improvements in food handling behaviour to the standards set by the awarding bodies.

11.4 The Royal Institute takes substantial steps to ensure the quality of its own training course and their delivery. Sadly, much of the training quality within the UK must be open to question and the standards of some awards are in danger of falling into disrepute.

12. STANDARDS OF FOOD HYGIENE EDUCATION

12.1 Currently, no standard of food safety education is required by law for those being trained or even for the proprietors of food businesses who are expected to apply the training. The Royal Institute's view is that there should be a statutory requirement for a qualification in food safety for any proprietor or manager of a food business. This should be the logical starting point for any general training requirement for food handlers.

12.2 In the long-run, food safety can be achieved only if the persons responsible for its presence, either on the farm, in food manufacturing, catering, retailing or in domestic kitchens are motivated to ensure it. Motivation will not necessarily come from law enforcement, although this can act as a substantial deterrent to bad practices. This will come from education and acknowledgement of a sense of responsibility. Government resources spent on raising motivation therefore, are more likely to show cost benefits than any other action on food safety.

13. Food Safety and Hygiene Education for Children

13.1 The food safety education of children from primary school age is important and is perhaps not being addressed sufficiently. Future attention should be paid to the simple measure of ensuring the teaching of small children to wash their hands after using the toilet and before eating their food.

13.2 Food hygiene needs to be included in the core curriculum rather than in optional subjects.

14. Risk Communication

14.1 The role of the Food Standards Agency in risk communication will be highly important. The public needs to be able to differentiate between real risks such as drug resistant Salmonellas and perceived risks such as irradiated foods.

14.2 Consumers are not helped by reminders that food safety may be achieved by temperature control, when their domestic refrigerated cabinets provide no indication of the air temperature achieved. Additionally, simple helpful measures could be introduced; for example, by colouring the lower part of refrigerators to indicate the safest place to store uncooked meat so that any juices do not drip onto foods which receive no further cooking.

15. Getting the Message Right

15.1 Messages put out in the past have obviously not all reached their target. Raw shell eggs are still being used in some dishes despite the Chief Medical Officer's warning in 1989 that they should be avoided in food preparation.

15.2 Keeping information understandable and relevant is essential. Many current publications, advisory leaflets and videos appear to be aimed at middle class home and educated households and are not likely to impact elsewhere.

15.3 Product labelling and the meaning of "use by" and "best before" dates still seem to cause confusion. Storage information needs to be more clear and conspicuous on foods, with clear distinction as to when "use by" and "best before" dates are applicable.

15.4 Genetically modified foods do cause public concern, simply because the public to date have not been able to grasp the case for their safety from the scientific and other evidence presented to them. The same problem applies to irradiated food—having introduced legislation making it marketable in the UK, would it not be appropriate for a Minister (MAFF or DH) to be publicised eating an irradiated product (appropriately labelled) or be otherwise more actively involved in promoting irradiated products as safe food?

15.5 The public are ambivalent on these products because the Government shows no willingness to indicate that it really believes in them or that they represent a contribution to food safety.

16. Enforcement Issues

16.1 The Royal Institute is in agreement with Professor Pennington regarding the acceleration of HACCP for high risk premises such as butchers and establishments preparing large quantities of cooked meats. The emphasis in enforcement should be on ensuring the knowledge and application of risk prevention procedures within these premises.

16.2 Licensing focuses attention on such premises but requires extra local authority resources. In our view, licensing merely adds more bureaucracy to the enforcement process. On its own, it can not ensure that regular and frequent inspections of the premises by EHOs take place, or that persons within the premises are trained in and observe appropriate safety procedures. We accept, however, in the light of the serious nature of the *Ecoli* 0571 risk that the Government wishes to take every measure possible to alleviate such risk.

17. A National Standard Inspection and Marketing Scheme for Food Premises

17.1 Both for enforcement and internal audit purposes a national standardised inspection and marking system for food premises could be introduced. Such a system—related to HACCP procedure would aid training programmes for EHOs and other enforcement staff and also food business proprietors, managers and supervisors (especially the small businesses).

17.2 Both the food industry and the national enforcement agencies employing standard formalised and documented inspection and marking procedures based on HACCP principles would be seen to be working to the same objectives and comparative data could be produced.

17.3 Such a development would be in line with the UK Guides to Good Hygiene Practice either already produced, or being developed under Directive 93/43/EEC and the Food Safety (General Food Hygiene) Regulations 1995.

18. USE OF THE EXPRESSION "HACCP"

18.1 HACCP has been known and implemented world-wide since the late 1970s. After almost 20 years it has become inceasingly established as the favoured food hygiene management tool. The expression has entered the vocabulary of every country which claims or wishes to have involvement in international trade of foodstuffs. It was, therefore, a matter of some regret that the view was allowed to take hold in the UK that, HACCP represented concepts that food businesses could not understand and principles which were inimical to catering and hospitality operations.

18.2 The expression "HACCP" has achieved wide acceptance throughout all EU Member States. It is, therefore, time that the UK Government abandoned the search for forms of words which did not upset small traders and embarked on the campaign to demystify the subject by informing all food businesses about the concepts and advantages of this approach to hygiene management.

19. SHARED RESPONSIBILITY

19.1 As part of the policy of strengthening national food safety programmes, the World Health Organisation introduced the concept of Shared Responsibility. This underlines that although food safety is mainly a health issue, action to improve food safety calls for the involvement of many government, public and business sectors. Agriculture, trade, tourism, education, industry and the environment are all sectors where food safety is important not only for health but also for economic well being.

19.2 Awareness of the importance of food safety and how to maintain it should feature in all educational and training programmes to some degree, because it is fundamental to the way we live. The Royal Institute hopes that the Food Standards Agency will use the concept in its future educational activities.

20. DIVISION OF RESPONSIBILITY

20.1 The Department of Health and MAFF, the territorial Departments in Scotland, Wales and Northern Ireland, local authorities, the Meat Hygiene Service, the State Veterinary Service, the PHLS and Public Analysts all have current responsibilities for food safety control.

20.2 The role of the Food Standards Agency in co-ordinating activities and promoting and supervising the various functions performed has yet to be developed.

20.3 How MAFF and the DoH interests are to be maintained and their food safety functions performed at each step of the food chain when the Agency is in place, is still unclear. Confusion arises over the close involvement by two Ministers—in MAFF the Minister for Food Safety and in DoH the Minister for Public Health.

20.4 Consumers and the public in general will ask where does the "buck" stop in future when a food problem arises? Does one Minister, for example, the Minister for Public Health have the power to make clear decisions on vital issues without the involvement or influence of the other? Government must ensure that, even when farming or food industry interests are at stake, the health of the consumer is paramount.

16 October 1997

APPENDIX 24

Memorandum submitted by the United Kingdom Agricultural Supply Trade Association Ltd (UKASTA) (C27)

A. INTRODUCTION AND GENERAL ISSUES

1. UKASTA represents about 360 companies, most of which are either manufacturers of products in the animal feed sector, or agricultural merchants who both sell inputs such as feed, seed, fertiliser, forage additives and agrochemicals to farmers, and market crops on their behalf. The combined turnover of the membership is in the order of £5 billion annually.

2. The Association made a response to the James Report and supported the proposal for a separate Food Standards Agency with a remit to improve public confidence in the safety and nutritional suitability of our food.

3. However, any measures to ensure a high level of food safety in order to safeguard public health and increase the confidence of consumers in their food supply must:

(i) be based on unambiguous scientific evidence and risk assessment;

(ii) not disadvantage UK exports to EU member states and third countries;

(iii) be equally applicable to imports from EU member states and third countries; and

(iv) be equally applicable between the various sectors within the UK which carry out the same activity but have a different legal status—eg commercial feed manufacturers and on-farm mixers.

4. Where it is necessary to set maximum levels of potentially harmful substances in food and feedstuffs, it is essential that they should be based on sound scientific evidence and follow from a suitable risk assessment. UKASTA is concerned at a growing tendency to reduce such limits merely because analytical technologies allow smaller and smaller levels to be detected, rather than setting them at those levels where there is no known risk to health.

5. A current example is the European Commission proposal to harmonise lead and cadmium levels in cereals at 0.1 mg/kg across the EU, a tenfold reduction from the existing UK limit of 1 mg/kg. We are aware of no scientific evidence that this measure will benefit public health, but it could make significant quantities of UK cereals unsaleable because of natural levels of lead and cadium in soils.

B. GMOs

6. UKASTA has joined with other industry organisations in publishing a joint code of practice for the provision of information on Genetically Modified Crops. The Association views genetically modified crops as offering real benefits to the environment as well as to both growers and consumers and believes the current regulatory framework is sufficiently rigorous in providing consumer protection and assurance, but the introduction of genetically modified food and feedstuffs must take place in line with the demands of the market.

7. We await sight of the detailed Commission proposals for the labelling of feed and seed containing genetically modified organisms; however there is some concern as to the workability of their proposals based on the outline given already. We fully support the concept of consumer choice but remain to be convinced that these proposals will deliver that choice.

C. Assurance Schemes

8. UKASTA fully supports the intention of Government to ensure that the food the nation's population buys is safe to eat. The Association has, therefore, been active in establishing protocols to assure the food safety of primary agricultural commodities and feed materials on their journey from farm or port of origin until delivery to the first processor. UKASTA is also developing a Feed Assurance Scheme which is incorporating many requirements of current and pending legislation as well as other aspects which go beyond statutory controls. At the same time the aim is to provide members with practical guidance on the manufacture of safe animal feedingstuffs. UKASTA considers that it is essential that these provisions be extended to cover all routes by which feed is fed to UK farmed livestock. The Scheme, which will be voluntary, will, hopefully, be implemented by the industry during the course of 1998.

The following new Codes of Practice are in preparation:

(i) Code of Practice for Road Haulage;

(ii) Code of Practice for the Storage of Containable Crops (ie cereals, oilseeds and pulses); and

(iii) Code of Practice for the Manufacture of Safe Animal Feedingstuffs.

In addition, there is already in existence a joint scheme with the Grain & Feed Trade Association (GAFTA) for the storage of dry raw materials in port stores.

9. It is intended that these schemes will join onto similar schemes covering primary production on farm, and the eventual processing of the commodities, to form an unbroken and independently verified chain of assurance from the farm to the eventual consumer.

D. UKASTA'S Merchanting Sector

10. UKASTA members, as major suppliers of essential farm inputs are leading the industry in providing advice on the responsible use of plant health products and fertilisers, as well as feedingstuffs, both medicated and non-medicated, in order to ensure that these useful products are not used inappropriately to the detriment of consumers or the environment.

11. UKASTA was instrumental in setting up, and continues to oversee, BASIS and FACTS, registers of professional practice and technical updating for the agrochemicals and fertiliser sectors respectively. UKASTA actively promotes the Integrated Crop Management (ICM) concept for the responsible use of farm inputs.

12. The majority of cereals and pulses are traded on UKASTA contracts, and oil seeds on joint UKASTA/FOSFA contracts. UKASTA contracts require that all goods are sound and merchantable and free from mould, heat damage, green grain, infestation and objectionable smell and taste, and are free of ergot. All contract goods must comply with the MAFF Code of Practice for the Control of Salmonella During the Storage, Handling, and Transport of Raw Materials Intended for Incorporation into Animal Feedingstuffs. In addition, all loads must be accompanied by a written declaration of any post harvest pesticide treatment, and only be carried in a vehicle fit to carry goods entering into the food chain.

E. FEED SECTOR

13. It is estimated that approximately 16 million tonnes of compound feedingstuffs is fed annually to UK farm livestock. Of this total, approximately 14 million tonnes is manufactured by commercial feed compounders and integrated poultry producers (for detailed statistics please see Tables 1 and 2). The vast majority of these manufacturers are members of UKASTA. The remaining 2 million tonnes of feed is manufactured by on-farm mixers. Ruminant and some monogastric animals also consume forages and some straight feedingstuffs including home-grown cereals and root crops which, it is estimated, would amount to several million tonnes a year. (For a definition of the different types of feedingstuffs and additives, please see Appendix A).

14. The commercial feed industry, including integrated producers, is covered by very comprehensive legislation most of which is set out in regulations made under the Agriculture Act 1970, the Medicines Act 1968 and the Animal Health Act 1981.

15. The Feedingstuffs Regulations 1995 (as amended), made under the Agriculture Act 1970, require that feedingstuffs sold should be fit for their intended purpose, free from harmful ingredients and of no danger to either animals or humans. These Regulations also control the composition and marketing of non-medicated feedingstuffs and lay down the maximum permitted levels of authorised non-medicinal additives, undesirable substances including mycotoxins, heavy metals, pesticide residues and prohibited ingredients.

16. The legislation under the Medicines Act controls the marketing, composition and manufacture of medicated feedingstuffs. The current controls on the manufacture, sale and supply of medicated feedingstuffs were introduced in 1988–89. An important part of the regulations was the requirement for all manufacturers who incorporated medicinal products in feed, including supplements and protein concentrates, to belong to a Register of Approved Manufacturers. The Register is divided into two groups. Category A manufacturers are essentially drawn from the commercial feed industry and Category B from on-farm mixers.

17. VMD has just commenced consultation on new legislation in this area. UKASTA believes that changes to be introduced in April 1998 will reinforce the controls currently in operation.

18. The BSE controls relevant to the feed industry are laid down in the Bovine Spongiform Encephalopathy (No 2) Order 1996. This prohibits the use of mammalian protein in ruminant feedingstuffs and mammalian meat and bone meal in feed for all farmed livestock. The feed industry has always followed Government advice on BSE and, in the use of specified bovine offals, has anticipated legislation.

19. The other legislation made under the Animal Health 1981, of importance to the feed industry is the Zoonoses Order 1989. This legislation requires the MAFF to be notified if a salmonella serotype is isolated in a sample of feedingstuff. The Regulations do not compel the testing of animal feedingstuffs for salmonella. Such monitoring is done on a voluntary basis in accordance with the Codes of Practice drawn up between UKASTA, MAFF and other interested organisations.

Antibiotic Resistance

20. During 1990–96 the total number of salmonellas in human beings in the United Kingdom referred annually to, respectively, the Public Health Laboratory Service (PHLS), Scottish Centre for Infection and Environmental Health and DHSS (NI) was about 33,500. In 1996, about 6,500 of these isolations were of *Salmonella typhimurium.* An important factor in this increase, which started in 1990, had been an epidemic of multi-drug resistant *Salmonella typhimurium* DT104.

21. Since 1990, isolates of *S typhimurium* DT104 with resistance to ampicillin (A), chloramphenicol (C), streptomycin (S), sulphonamides (Su) and tetracyclines (T) (= R-type ACSSuT) have predominated in human beings. Since 1994, it has also been reported that isolates of multi-resistant *S typhimurium* DT104 with additional resistance to trimethoprim (R-type ACSSuTTm) or to ciprofloxacin (R-type ACSSuTCp) have increased in incidence. In 1996 21 per cent of *S typhimurium* DT104 isolates from human beings were of R-type ACSSuTTm and 13 per cent were of R-type ACSSuTCp or ACSSuTTmCp.

22. It should be noted that all the antimicrobials mentioned above are only available for the treatment of animals under veterinary prescription. Only three of these antimicrobials can be prescribed for incorporation into feedingstuffs under a VWD ie sulphonamides, tetracyclines or trimethoprim. However, they will not be used via this route in ruminating animals because of their adverse effect on rumen bacteria.

23. The Central Veterinary Laboratory also reported that *S typhimurium* DT104 R-type ACSSuT had become increasingly common in cattle in England, Wales and Scotland. The organisation had also been isolated from other food animals including poultry, sheep and pigs. However, as reported by MAFF, S. typhimurium is rarely found in animal feedingstuffs.

24. UKASTA was instrumental in the drafting of the Ministry's 1989 Code of Practice for the control of salmonella in animal feedingstuffs. This was subsequently revised in full consultation with interested organisations by MAFF and circulated around the feed industry. MAFF produced three Codes of Practice directly applicable to animal feedingstuffs which are:

- Code of Practice for the control of salmonella during the storage, handling and transport of raw materials intended for incorporation into or direct use as, animal feedingstuffs (MAFF Publications 1995 PB 2202).
- Code of Practice for the control of salmonella in the production of final feed for livestock in premises producing over 10,000 tonnes per annum (MAFF Publications 1995 PB 2200).
- Code of Practice for the control of salmonella in the production of final feed for livestock in premises producing less than 10,000 tonnes per annum (MAFF Publications 1995 PB 2201).

25. As with the initial documents produced in 1989, these Codes of Practice formalise procedures within the feed industry designed to minimise the risk of animal feedingstuffs being vectors for introducing salmonella and other pathogens into the food chain.

Other Zoonotic Problems

26. UKASTA constantly monitors the media for any reference, however tenuous, to the animal feed route being a vector for disease organisms. For instance in the case of *Escherichia coli* 0157, before the Lanarkshire outbreak, we had discussed the possiblility of this bacteria being transmitted by feed. Our understanding is that the pattern of inhibition, growth requirements and destruction of *Ecoli* by heat treatment and the use of chemical processing aids, are generally similar to those of other enterobacteriaceae such as salmonella. Hence, production processes that control salmonella will probably also control *Ecoli* serotypes. We understand that the incidence of multi-drug resistence in *Ecoli* 0157 is at a low level.

Additional Comment on the Inclusion of Medicinal Products in Feed

27. UKASTA recognises that even after the control measures already introduced, potential problems may still be associated with the use of medicinal feed additives in livestock production. These include veterinary medicinal residues being detected at very low levels in meat or eggs and possible links between some POM antibiotics and bacterial resistance. However, our consultations lead us to believe that in many instances the feed route is the safest one for the administration of these products. The Association would obviously be concerned if the use of individual medicinal feed additives led to the development of bacteria resistant to therapeutic antibiotics prescribed for use in human beings. We are aware of suggestions that the use of antimicrobials in human medicine is a significant cause of antibiotic resistance and that some multi-resistant strains may already be well established. We are not in a position to evaluate these suggestions but it is clear that an expert and critical assessment of the use and value of antimicrobials in human medicine is desirable.

F. CONCLUDING REMARKS

28. This document incorporates UKASTA's current views on a wide range of Food Safety issues. We had hoped to present these in a better co-ordinated and more coherent set of comments, but lack of time and resources has forced us to abandon that hope.

29. We nevertheless hope that the evidence above will be of value to the Committee, and we would be pleased to offer any further views or assistance they might request.

17 October 1997

Table 1

COMPOUND FEED OUTPUT—UNITED KINGDOM

Feed Output (Thousand Tonnes)	*1990*	*1991*	*1992*	*1993*	*1994*	*1995*	*1996*
Calf Milk Replacers	23.2	24.2	29.0	28.5	28.1	22.3	20.3
Other Calf Feeds	292.1	249.6	205.4	224.3	249.9	275.8	243.8
Total Calf Feeds	315.3	273.8	234.4	252.8	278.0	298.2	263.9
Dairy Feeds	3,074.3	2,938.7	3,140.6	3,264.4	3,213.9	3,195.1	3,052.7
Other Cattle Feeds	688.9	727.3	797.6	838.5	959.6	1,100.0	1,168.3
Protein Concentrates	97.4	93.9	93.5	95.3	93.0	107.7	112.4
Total Cattle Feeds	3,860.6	3,759.9	4,031.7	4,198.2	4,266.5	4.403.8	4,333.4
Total Cattle and Calf Feeds	**4,175.9**	**4,033.7**	**4,266.1**	**4,451.0**	**4,544.5**	**4,702.0**	**4,597.3**
Pig Starters and Creep Feeds	182.4	203.9	162.5	164.5	158.5	161.4	163.2
Pig Growing Feeds	n/a	n/a	n/a	653.3	653.6	580.1	600.0
Fig Finishing Feeds	n/a	n/a	n/a	881.5	911.3	942.4	988.9
Pig Breeding Feeds	677.5	693.2	745.3	779.4	748	699.1	739.7
Other Pig Feeds	1,367.7	1,403.5	1,504.6	n/a	n/a	n/a	n/a
Protein Concentrates	61.3	52.2	52.9	51.4	47.9	38.7	41.3
Total Pig Feeds	**2,288.9**	**2,352.8**	**2,465.3**	**2,530.1**	**2,519.3**	**2,422.1**	**2,533.1**
Layer Feeds	951.6	942.3	898.3	885.0	893.3	895.5	932.3
Broiler Feeds	1,702.3	1,761.9	1,693.3	1,652.1	1,662.8	1,684.5	1,748.7
Turkey Feeds	634.8	629.6	597.8	632.9	661.3	765.8	746.7
Other Poultry Feeds (a)	536.8	518.9	582.2	596.4	639.9	641.7	654.0
Protein Concentrates (GB only)	31.7	12.9	12.1	12.7	12.2	8.8	8.2
Total Poultry Feeds	**3,857.2**	**3,865.6**	**3,783.7**	**3,779.1**	**3,869.3**	**3,996.3**	**4,089.9**
Breeding Sheep	n/a	n/a	n/a	360.8	404.6	408.8	463.5
Grower/Finisher Feeds	n/a	n/a	n/a	166.8	212.6	251.0	248.7
Protein Concentrates	n/a	n/a	n/a	5.9	6.3	9.8	9.6
Total Sheep and Lamb Feeds	**531.6**	**569.2**	**564.7**	**533.5**	**623.5**	**669.6**	**721.8**
Total Miscellaneous Feeds inc. horse and fish feeds	324.0	289.7	350.4	378.6	399.2	443.5	485.9
Total Compounds	**11,178**	**11,111**	**11,430**	**11,672**	**11,956**	**12,233**	**12,428**

(a) Other poultry feed includes breeding and rearing diets in Great Britain and protein concentrates in both Great Britain and Northern Ireland.

Source: MAFF and DANI Returns. Updated Q3 96.

Table 2

INTEGRATED POULTRY FEED PRODUCTION

Raw Material Usage (Thousand Tonnes)

	1990–91	*1991–92*	*1992–93*	*1993–94*	*1994–95*	*1995–96*
Wheat	901	817	874	962	984	935
Barley	119	216	192	162	136	221
Maize	3		2	2		
Other Grains	6	5	4	3	10	2
Total Grains	**1,028**	**1,037**	**1,071**	**1,130**	**1,157**	**1,158**
Estimated Other Materials (1)	613	710	813	843	810	829

Feed Production (Thousand Tonnes)

	1990–91	*1991–92*	*1992–93*	*1993–94*	*1994–95*	*1995–96*
Broiler Chicken	932	951	966	1,012	1,025	1,046
Turkey Feeds	243	258	295	309	333	337
Layer Feeds	314	321	361	388	349	344
Breeding and Rearing Feeds	130	112	123	142	153	154
Other Poultry Compounds		1	8	3	2	1
Protein Concentrates	22	104	131	119	105	105
Total Compounds	**1,641**	**1,747**	**1,884**	**1,973**	**1,967**	**1,987**

NB Only including integrated producers who do not report production in the survey of compound feed output.

(1) No data is supplied for use of other than grain by integrated producers. The figure thus represents total feed production less usage of grain.

Source: MAFF Revised and Updated Q3 96.

Annex A

1. Definitions of Animal Feedingstuffs

The enormous advances in the development of scientific feeding of livestock, during the last 60 years or so, have led to a whole new range of feedingstuffs becoming available on the market. These provide the farmer with a range of options from which he can select the one most suited to his particular enterprise.

Arising from these developments, animal feedingstuffs terminology has become complex and, in some respects, a little confusing. The following definitions are an attempt to clarify the situation. It is stressed that they are not legal definitions but merely what is meant by the terms commonly used in the compound feed industry.

Compound Feeds

A number of different ingredients, including major minerals, trace elements, vitamins and other additives are blended and mixed in appropriate proportions to provide properly balanced diets for all types of livestock at every stage of growth and development.

In some cases, such as in ruminant feeding, compound feeds are designed without being mixed with cereals, to supplement the farmer's own feed resources. In such cases, compound feeds are frequently described specifically as designed to balance feeding with silage, straw, kale and the like.

Protein Concentrates

These are products specifically designed to be mixed, before being fed, at an inclusion rate of 5 per cent or more with predetermined proportions of cereals or other feedingstuffs. This process may be carried out either by livestock producers themselves or by a feed manufacturer.

Since the objective in this case is to ensure that the final ration which emerges after mixing is formulated for a particular feeding purpose, protein concentrates typically contain blended protein-rich ingredients such as fishmeal and soyameal, fortified with essential minerals, vitamins and trace elements.

In cases where the inclusion rate of protein concentrates to be used in the final diet is high—for example, over 50 per cent—they will contain some cereals or cereal by-products.

Straights

These are single material feedingstuffs of either vegetable or animal origin which may or may not have undergone some further processing prior to being sold.

Straights rarely provide, on their own, the complete nutritional requirements of livestock. Examples of straight feedingstuffs include wheat, barley, oil-cakes and meals and fishmeal.

Straight feeds are the raw materials from which all technically formulated feeds are prepared, whether mixed on the farm or manufactured in a compound feed mill.

Supplements

These are technical products, designed to comprise less than 5 per cent by volume of the ration in which they are to be included. Their purpose is to supply an appropriate level of vitamins, trace elements, non-nutrient additives and any other special ingredients.

To facilitate the mixing of such materials into the finished ration, appropriate levels of the active materials are normally designed to be present in the form of a supplement to a diluent carrier. Most supplements are available to both compound feed manufacturers and livestock producers.

Additives (including medicinal products)

Such additives include coccidiostats and anti-blackhead medications for mass prophylaxis or treatment on veterinary prescription, antibiotics for growth promotion, prophylaxis or treatment on veterinary prescription, antioxidants, colourings, flavourings and binders.

Source: Feed Facts Quarterly (HGM Publications).

APPENDIX 25

Memorandum submitted by the Ulster Farmers' Union (C30)

1. The Ulster Farmers' Union (UFU) is grateful for the opportunity to comment on Food Safety to the HOC Agriculture Committee.

2. The Union fully recognises the need to restore and ensure continuing consumer confidence in the United Kingdom food safety control system. It also fully recognises similar needs in relation to the safety of food itself.

3. The Union also recognises the necessity of putting in place a thorough-going and publicly open auditing system. This would provide the necessary assurances to consumers on the safety of the food products of the United Kingdom.

4. This procedure requires to be undertaken by a structure to be established. The structure requires oversight by a body to be comprised of completely independent and respected individuals who are capable of achieving public credibility.

5. The Union accepts and understands that such a body needs to have scientists and consumers represented but it also insists that knowledge of food production and quality is essential. Accordingly, the body must also have knowledgeable and qualified agricultural producers and processors sitting alongside other interests.

6. The HOC Agriculture Committee will be very well aware that Northern Ireland sells 70 per cent of its agricultural production outside the Province. The vast majority of this is also processed within the Province prior to sale. This contrasts with the rest of the United Kingdom where reliance on exporting is proportionately very much less.

7. As a consequence of this fact, a comprehensive but non regulatory approach has been taken towards Food Safety in the Province. The basis of this approach, the Union understands, is a Food Safety Committee. This comprises senior policy and technical officials from the Department of Health and Social Security and from the Department of Agriculture for Northern Ireland.

8. This Food Safety Committee is complemented by two other groups. *First* is the Meat Hygiene Group comprising environmental health officers, veterinarians and policy officials. *Second* is the Notifiable Diseases Group.

9. This structure works well with rapid response times and an integrated approach which when required has the necessary contacts very quickly to achieve required action urgently and comprehensively.

10. It is essential that this structure is given due cognisance and that it is carefully retained and developed.

11. In addition, and in view of the extent to which external sales govern the market in Northern Ireland, there are a number of initiatives which have been or are being implemented in Northern Ireland in a unique way. Only one of these is the Livestock Chain Management project which is designed to give Northern Ireland food produce a thorough and fully inter-connected livestock to food production chain.

12. The Union, therefore, takes the view that there is a need for a separate system in Northern Ireland with a Food Standards Agency which oversees current activity and reports to the public in relation to it. The NI Food Standards Agency would of course have the responsibility for delivering UK legislative and regulatory regimes. It would also be a suitable vehicle to oversee any unique local initiatives. There is every reason therefore, why such an Agency should act in a co-ordinated capacity with United Kingdom structures.

13. The Union would wish to see the NI Agency being represented on the UK Agency to ensure consistency of result.

14. The role of the Agency should be confined to Food Safety. The Union does not believe that it is any part of the role of such a body to deal with diet and the way food is cooked. Nor, we believe, is it any part of the role of such an agency to dictate animal and crop husbandry. It is fundamentally in existence to safeguard the safety of food. There are numerous existing controls in Northern Ireland via the veterinary animal health, public health and environmental health inspections to ensure production methods are legal, healthy, safe and cognisant of animal welfare.

15. A major concern is the whole question of imported food. This is a question which must be dealt with very carefully. It is essential that imported food is subject to the same safeguards as the food that is produced and processed within the United Kingdom.

16. A further concern is the sensible handling of scientific research and its results in the media, in schools and by the public. It is essential that research projects and findings are described correctly and accurately and further that reporting is in the context of a clear understanding of statistical viability.

17. The question of genetically-modified organisms (gmos) and their use in the food chain remains unresolved. In general, farmers are not only concerned from a scientific stand point that gmos are used. However, given the prime position of the consumer, it is this view that prevails. It is a clear belief at present that the UK consumer does not wish gmos in the food chain. So long as this wish exists, farmers will be reluctant to use these organisms.

18. It is difficult at this stage to be more categorical in this matter pending Government announcements. It is the understanding of the Union that Government will soon publish a White Paper which is expected to encapsulate all the proposals made in the document issued in May under the authorship of Professor W P T James and entitled "Food Standards Agency—An Interim Proposal". The Union awaits the Government plans with anticipation.

16 October 1997

APPENDIX 26

Memorandum submitted by the Dairy Industry Federation Ltd (C31)

GENERAL

1. The DIF welcomes the Committee's enquiry into food safety, which it believes is particularly timely given the proposal for the creation of a domestic Food Standards Agency and the initiatives within the European Union on the ways in which food safety can be better ensured. It is clearly of paramount importance that foodstuffs which are placed on the market are safe from a scientific, microbiological and hygienic point of view. There has been considerable criticism of the current structures which are responsible for ensuring the safety of food supplies in the UK and the Federation supports the Committee's initiative in examining the food sector with a view to identifying any weaknesses in the current system and to consider proposals for improvement.

BACTERIAL FOOD POISONING

2. The DIF believes that the incidence of bacterial food poisoning in the UK is well-documented and recorded. The operations of the Central Diseases Surveillance Centre and the Public Health Laboratory Services ensure that information is collected on as current a basis as possible and is made readily available to companies and trade associations with particular interest in this area.

3. The DIF believes that the system of notifying cases of food poisoning works well in the main. We would suggest, however, that where the Department of Health detects an increase in the incidence of food poisoning in a particular foodstuff, it should consider whether earlier warning could be given to the trade association for the industry concerned in order that attention is drawn to the problem and any remedial steps taken at the earliest opportunity. This could assist in ensuring that the problem does not escalate to a point where product needs to be withdrawn and would be a welcome supplement (from the point of view of both the food manufacturer and the consumer) to the scientific and quality control measures which companies already have in force.

4. The DIF would urge resources to be made available to address the issue of consumer education in the handling and storage of foodstuffs. We believe this would serve to reduce the incidence of food poisoning.

FOOD SAFETY

5. It is, of course, the case that there has been considerable criticism of the current structures which are responsible for ensuring the safety of food supplies in the UK.

The bulk of this criticism has concentrated on the fact that food safety is currently the prerogative of many Government departments and committees, thus leading to overlapping and confusion. The DIF welcomed the publication of Professor James' report as the basis for consultation and discussion. In its reply to that consultation exercise, the DIF stated its support in principle for the creation of an Agency which it believes will serve to promote food safety and to raise consumer confidence in this vital area. We look forward to the publication this autumn of the Government's White Paper on a proposed Food Agency. The DIF would like Government to continue to consult industry as widely as possible pending the White Paper's publication and trust that Government will give serious consideration to the comments which industry might make arising out of the White Paper. In the interim the DIF has welcomed the announcement by the Ministry of Agriculture, Fisheries & Food and the Department of Health that the new Joint Food Safety and Standards Group would bring together key MAFF and Department of Health officials in order to co-ordinate and better focus food safety policy and activities. We believe, however, that if the Agency is to instill confidence at all levels of the supply chain, from raw producer to consumer, its format will be key. In our view, it is essential that the directing body of the Agency comprise equal representatives of farming, the manufacturing industry, the public health sector and consumers and that those representatives be determined following consultation with interested representative bodies. The DIF does not support the proposal that issues relating to nutrition and health form part of the Agency's remit. We believe these issues should remain within the remit of the Department of Health given that nutrition and diet have no direct link as such with food safety. The effect on an individual of the foodstuffs he/she consumes will be affected by other matters such as age, hereditary factors and lifestyle. A copy of the DIF's response to the consultation exercise on a Food Standards Agency can be provided on request.

The DIF believes that a significant area where further research is required in the area of food safety is that of emerging pathogens, of which *Ecoli* 0157 is a recent example. By definition, very little is known of such pathogens and research could assist in assessing whether the cause of increased incidence in this area is that strains are becoming more resistant; that there is less processing of fresh products; or some other cause is at fault. Research would also be helpful in determining how such pathogens can be identified and ways in which both industry and consumers can prevent their arising.

FOOD SAFETY RISK

6. The Committee has invited evidence on the level of food safety risk at various stages of the human food chain. The DIF believes that the Government should not seek to distinguish between the different sectors of the supply chain, but adopt the EC's "plough to plate" concept of food safety. A cornerstone of food safety policy should be an emphasis on *prevention* of contamination of foodstuffs and food borne illnesses. The use of HACCP (Hazard Analysis and Critical Control Points) to identify all critical steps in the production and supply process should be encouraged as it ensures that cost and effort is concentrated on areas where the most likelihood of risk occurs.

In a similar vein, the DIF believes that food processors should not be automatically excluded from food safety legislation simply by virtue of their size. A better approach would be to have regard to the nature of the foodstuff being produced and its propensity to cause injury, together with the resources which are available to that particular operator. This mirrors the approach advocated by various Ministries in relation to inspections under and enforcement of the Food Safety Act 1990.

The DIF has undertaken a number of initiatives which are designed to improve the quality and safety of dairy products. In response to EC legislation which culminated in the Dairy Products (Hygiene) Regulations 1995, the DIF published Guidelines for Good Hygiene Practice which offered advice to its members on the application of HACCP in the dairy industry. A copy can be provided on request. More recently the DIF has become involved in two further initiatives:

— In conjunction with the NFU, UKFMPO and BCVA, the DIF has been involved in discussions designed to establish minimum improved on-farm standards for the production of raw milk.

— With the assistance of funding under the Government's Sector Challenge programme, the DIF is preparing to update the industry manual entitled "Methods for the Assessment of Raw Milk Quality" and this work will be carried out under the auspices of the industry's Milk Quality Forum.

The Milk Quality Forum comprises the DIF, UKFMPO and the NFU with MAFF and the BCVA acting as observers. The Milk Quality Forum was created in November 1994 following the demise of the Milk Marketing Board and serves a very useful function by bringing together the main parties in the dairy industry who influence raw milk quality. The Milk Quality Forum has put forward proposals to work on national milk quality statistics and has actively been seeking funding for that work. Unfortunately, despite approaches to various organisations, including MAFF, the funding has not been forthcoming.

GENETICALLY MODIFIED ORGANISMS

7. The DIF supports the principle that any genetically modified organism should be properly and scientifically evaluated from a food safety point of view before it can be introduced into the food chain. In this regard we support the work of the Advisory Committee for Novel Foods and Processes.

The DIF believes that consumers should be given sufficient information on products they are considering purchasing to ensure that consumers have an informed choice and to enable them to feel confident about the product in question. Such information should be meaningful, informative and enforceable. The DIF believes that any labelling requirements which attach to genetically modified organisms should apply on a European-wide basis so as not to disadvantage UK manufacturers and processors.

LABELLING

8. The DIF is aware of the debate which is being generated on the subject of food labelling and is supportive of calls for labelling to be meaningful to the consumer. Currently, there is a considerable volume of information which is required by law to be printed on food labels and yet often this is either considered irrelevant information by the consumer or it is not presented in a way which the consumer can readily understand and appreciate. The DIF believes that it may be time for the subject of food labelling generally to be subjected to scrutiny at an EC level.

BST

9. The DIF is opposed to the use of BST in line with the current EC moratorium on the use of BST in milk production.

16 October 1997

APPENDIX 27

Memorandum submitted by the Health and Safety Executive (C32)

1. This memorandum responds to the invitation from the Agriculture Committee on 30 June 1997 for the Health and Safety Executive (HSE) to submit written evidence to its Inquiry into current issues of concern relating to food safety which a new Food Standards Agency will have to address.

2. The Health and Safety Commission and Executive (HSC/E) are responsible for regulating occupational health and safety in Great Britain. The Commission advises Ministers on health and safety policy and makes proposals for health and safety regulations. The Executive supports the Commission and is responsible for making arrangements to enforce health and safety regulation.

3. Many of the subjects on which the Committee has requested evidence are those where the main responsibility does not lie with HSC/E. Generally, our interests in food safety issues are limited to areas where there is some read across to, or interface with, our responsibilities for occupational health and safety. The Health and Safety Commission's response to Professor James' report on the establishment of a Food Standards Agency highlights some of the interfaces between itself, the HSE and the Agency. This document may be of background interest to the Committee and a copy is attached at Annex 1 [not printed].

4. HSE wishes to comment on areas the Committee raises as follows:

> *recent trends in the incidence of bacterial food poisoning in the UK, and the effectiveness of the system of notifying cases of food poisoning*

The Control of Substances Hazardous to Health (COSHH) Regulations 1994 place a duty on employers to safeguard the health and safety of people other than their employees who may be affected by work activities, including infections by *food poisoning organisms*. However, HSE would not become involved in normal food poisoning cases as there is specific legislation which relates to the control of food safety (the Food Safety Act 1990). Such cases would be investigated by Local Authority Environmental Health departments who will use specific powers under the Food Safety Act and associated regulations.

HSC/E does however, have a direct role to play in food safety in the offshore oil and gas industry (the Food Safety Act does not apply offshore). Food safety offshore is regulated under the Health and Safety at Work etc Act 1974 and specific provisions in offshore regulations. This reflects the long-standing recognition that a single regime should cover all risks offshore.

Some food poisoning micro-organisms can infect people who work with food or animals. HSE may become involved in the investigation of such cases (for example cases of *Ecoli* 0157 among farmers and farm visitors). HSE also provides guidance and advice on the application of health and safety law to the control of occupational infections with food poisoning organisms and other biological agents (such as guidance on occupational zoonoses).

> *the level of food safety risk at all stages of the human food chain, including:*
> *on farms (agricultural practices, including use of feedingstuffs, agrochemicals and veterinary medicines)*

The food risks arising from the use of *pesticides* and *veterinary medicines* are almost entirely a matter for the Pesticides Safety Directorate and the Veterinary Medicines Directorate respectively. HSE does feed into the approvals process for both, but not on food risks. HSE's lead role in pesticide approval is confined to non-agricultural products, for which the food implications are negligible.

Feedingstuffs fall into two main categories: those produced and processed on-farm (eg hay, silage) and those from off-farm, which have been processed to a greater degree (eg concentrated feeds). The food safety risks from either type of foodstuffs are primarily biological agents (such as moulds etc) which may be present. These will also present occupational risk to those working on farms and in this situation, the COSHH regulations will apply (see above).

> *any food safety implications of the presence of genetically-modified organisms in the human food chain and the desirability and feasibility of labelling foodstuffs containing genetically-modified organisms.*

The food safety implications of genetically-modified organisms (GMOs) and labelling is of only peripheral interest to HSE as MAFF and DETR lead in these areas. HSE's interests lie mainly in the area of worker contact with GMOs, which is an occupational health and safety issue and not one directly related to food safety.

16 October 1997

APPENDIX 28

Memorandum submitted by the Veterinary Products Committee (C34)

Thank you for your letter of 30 July. The Veterinary Products Committee (VPC) welcomes the opportunity to provide the following evidence to the Agriculture Committee in relation to the level of food safety risk arising from the use, on farms, of veterinary medicines to assist its enquiry into the current issues of concern relating to food safety which any new Food Safety Agency will have to address.

The VPC is an independent body set up under Section 4 of the Medicines Act 1968. Its terms of reference are:

> To give advice with respect to safety, quality and efficacy in relation to the veterinary use of any substance or article (not being an instrument, apparatus or appliance) to which any provision of the Medicines Act is applicable.
>
> To promote the collection of information relating to suspected adverse reactions for the purpose of enabling such advice to be given.

There is, we believe, an inextricable inter-relationship between the quality and efficacy of veterinary medicines and their safety. These are the three statutory criteria set down in the Medicines Act 1968, and in European Community legislation, against which all applications for veterinary medicinal products are required to be assessed. The VPC carries out risk/benefit assessments which weigh these inter-relationships carefully before offering advice to Ministers on whether or not a product should be authorised for use within the United Kingdom.

In this area the VPC has access to valuable information from the Department of Health, the Health and Safety Executive, the Department of the Environment, the Scottish Environment Protection Agency and the Veterinary Medicines Directorate in preparing its advice. Officials from these Departments and Agencies attend Committee meetings and contribute to its discussions. It is we believe important to recognise that, to the best of our knowledge, no food safety incident has arisen as the direct use of an authorised veterinary medicinal product which has been used in accordance with its approved indications for use.

However, the VPC is constrained by the confidentiality requirements of Section 118 of the Medicines Act in terms of what information can be placed in the public domain. We welcome the fact that, while respecting this constraint, Licensing Ministers have in the past placed VPC reports on major safety issues, such as OP sheep dips, into the public domain and we believe there is scope for further disclosure so that only genuinely commercially sensitive material is held back from public scrutiny. It is important that our advice to Ministers should continue to be scientifically based but we have no objection to lay membership of the VPC nor to an "audit" of our advice by the Food and Health Commission as proposed by Professor James.

It must also be taken into account, in terms of food safety, that much of the work is carried out internationally in that maximum residue limits are set on the basis of scientific advice to the Codex Alimentarius Commission or to the European Commission. Increasingly, authorisations of veterinary medicines are being granted at the European Union (EU) level, through the European Agency for the Evaluation of Medicinal Products.

In response to an earlier recommendation from the Agriculture Select Committee, a member of the VPC now acts as Chairman to the Appraisal Panel for Human Suspected Adverse Reactions to Veterinary

Medicines, and so is well placed to alert the Committee to any trends upon which we would wish to see action taken.

The VPC does not formally oversee the programmes for surveillance of residues of veterinary medicines in meat and animal products, but notes that the present programmes, operated by the Veterinary Medicines Directorate, are the most comprehensive of any in the EU. Furthermore, the UK is the only member state which publishes its results in full. It is also perhaps significant that the scope of the EU Statutory Residue Surveillance Scheme will be extended in January 1998 to incorporate some of the foodstuffs currently in the UK's non-statutory surveillance scheme.

The VPC recognises the importance of the issue of antibiotic resistance, in terms of the authorisation of antimicrobial products for veterinary use. It has considered this issue on a number of occasions and takes note of it when assessing applications for the authorisation of antibiotics for veterinary use. The VPC also takes a very active interest in the work which is taking place both nationally and in the EU committees, and contributes experts to this work. It should be noted however that there is no scientific evidence on whether the development of resistance to antibiotics in animals is important to man. This is perhaps an area where an epidemiological study, using modern molecular biological techniques, could be designed to answer this question.

16 October 1997

APPENDIX 29

Memorandum submitted by the Consumers in Europe Group (C36)

CEG is a United Kingdom umbrella body for professional, statutory and voluntary organisations with an interest in the effects of EU policies and legislation on UK consumers

1. EUROPEAN COMMISSION'S GREEN PAPER ON FOOD LAW

Many of the points raised in the European Commission's Green Paper on the general principle of food law in the EU are also relevant to the current UK inquiry into food safety since much of food legislation now comes under Single Market rules.

2. CONSUMER EXPECTATIONS

Consumers will judge the Food Standards Agency on how effectively it meets fundamental consumer needs, rights and expectations. The European Commission has recognised in its successive consumer programmes that these are:

(i) the right to protection of economic interests;

(ii) the right to information and education;

(iii) the right to access to representation and consultation;

(iv) the right to protection of health and safety; and

(v) the right to redress.

A more consumer-led approach to food safety and public health is needed. At EU level this has been reflected in the current re-organisation of DG XXIV. We hope that the planned Agency will support the principles of transparency, independence, accountability and consistency for the provision of scientific advice, development of food policy and enforcement of legislation.

3. NUTRITION AND SCOPE OF THE AGENCY

We strongly support the inclusion of nutrition within the proposed Agency. Therefore we hope that the Committee will wish to broaden its inquiry to such food issues, in addition to food safety.

4. AMSTERDAM TREATY

The UK's food policy is likely to be affected by the, as yet unratified, Amsterdam Treaty. CEG wishes to underline the importance of ensuring consumer protection and public health, as set out in the Amsterdam Treaty and reinforced by the Member States at Amsterdam. The Inter-Governmental Conference amended Article 129 of the Treaty to ensure a high level of human health protection in all areas of EU policy. CEG supports the ratification of this amendment.

5. REGULATORY FRAMEWORK AND APPROACH

An effective legislative and regulatory food safety framework is essential and necessary to ensure that the entire food chain is covered. The regulatory framework must be designed and implemented in such a way as to take full account of the fact that the primary responsibility for the production of safe and wholesome food lies with producers and industry.

A balanced approach is necessary between detailed prescriptive legislation and a more general legislative approach. CEG believes that, because of the increase in food problems (eg BSE and *Ecoli*) in recent years, and because of the previous Government's and the European Commission's de-regulatory approach, it will be important not to let the balance tip in favour of self-regulation. Indeed more rigorous control and independent audit procedures may need to be introduced to ensure that the highest standards of food safety are promoted.

6. STATUS OF GUIDELINES

CEG considers that legislation is preferable to voluntary guidelines that are not backed up by law. This is particularly important where food safety is involved. It may be appropriate to "anchor" guidelines by referring to them in legislation. For example, CEG has supported the use of the guides to practice, referred to under the General (Food) Hygiene Directive, and which play an important role in implementing HACCP principles. In this way, guidelines become subject to Community law.

7. HYGIENE AND HACCP PRINCIPLES

In order to be effective any system of food hygiene legislation must cover the entire food chain, from primary production until the point of consumption.

CEG fully supports the use of Hazard Analysis and Critical Control Point (HACCP) principles as the basis for systems of "own checks" by establishments. This is the modern approach to hygiene law and one that is accepted internationally. We believe that the process of implementing HACCP promotes an understanding of hygiene and should therefore be applied to all establishments regardless of size.

8. LABELLING

The appropriate provision of informative food labelling in a format that is useful and understandable is of great concern to consumers. Proper and careful research is needed to establish what information, format and level of detail on labels would best serve consumers. Consumers must be consulted before any decision is taken to remove information from food labels.

The question of amending the labelling rules to provide for more information about the possible presence of known allergens in foodstuffs is extremely difficult. Whereas it is clearly desirable to provide warnings about potential hazards, the practicalities of doing so by means of the food label are so difficult that consumer education and information by other means must be encouraged.

9. GENETICALLY MODIFIED FOODS

On the subject of novel foods, consumers must be able to choose between foodstuffs produced using genetic modification and those which have not. This is not purely a safety issue but the right of consumers to know how their food has been produced. Both processed and unprocessed food must be clearly labelled with the appropriate information. The labelling provisions of the EU Novel Foods and Novel Food Ingredients Regulation do not go far enough to give consumers the information they need, because the wording is open to differences in interpretation. EU agreement on labelling requirements is needed to clarify the situation.

10. PRODUCT LIABILITY

CEG supports the extension of the scope of the EU product liability directive to cover unprocessed primary agricultural production. This is consistent with CEG's view that consumer protection is paramount and should be effective throughout the food chain.

11. THE INTERNATIONAL DIMENSION

The growing importance of the Codex Alimentarius and the World Trade Organisation (WTO) and their influence over EU and UK legislation is of key concern. Consumers International (CI) is the only consumer organisation allowed representation at Codex, and then only as observers. Therefore, consumers have very little voice at the international level compared to the national or EU level, and it is very difficult for their views to be taken into account. Consumer involvement at the global level of decision-making must be improved and Codex Alimentarius and WTO procedures should be made more transparent. It is of great importance that consumer protection is not relaxed. This issue has been highlighted by the recent WTO challenge to the

EU's ban on hormone-treated beef and also by the Codex Alimentarius Commission's recent deferral of a vote on BST.

16 October 1997

APPENDIX 30

Memorandum submitted by Cambac JMA Research (C 37)

CLEANLINESS OF FARM ANIMALS AS THEY ARE PRESENTED FOR SLAUGHTER

The level of cleanliness of farm animals as they are presented for slaughter has serious implications for food safety. Various studies have shown that the degree of soiling of the live animal significantly affect the microbial load of the dressed carcase. In particular Hadley, Holder and Hinton (1997) showed that modifications to abattoir dressing procedures cannot wholly compensate for poor standards of animal cleanliness. Delivery of dirty livestock is acknowledged as a persistent problem in Great Britain (anon 1977), and efforts are being made to address this situation. However the factors which affect the cleanliness are many, and their relative importance is not widely understood. The data described in this report have been collated to give a preliminary indication of the level of the problems, and some insight into the various factors which may play a part in the presentation of clean livestock.

METHOD

The information presented in this report has been extracted from results gathered from three national surveys of livestock transport practice funded by MLC (Riches and Guise, 1995, Carlyle, Guise, Daly, Jones and Bond, 1996, and Carlyle, Guise and Bond, 1997). During the course of these surveys pigs, cattle and sheep were assessed for their cleanliness at despatch from the farm by the haulier responsible for their transport, and by Cambac Research staff at the point of unloading at the abattoir. While it is accepted that differences in the subjective assessment of cleanliness may have occurred between the haulier and Cambac staff, the latter were trained in this assessment to reduce any observer effect. The observed frequencies of animals arriving at the plant in an unclean state are therefore likely to be more accurate than the differences between loading and unloading, but these differences will give some indication of the level of the problem at the farm and how it changes during transport.

RESULTS

Figures 1, 2 and 3 describe the proportion of each of the three species which were deemed to leave the farm in a clean condition, and the proportion which arrived clean at the abattoir. 29 per cent of pigs, 33 per cent of cattle and 15.7 per cent of sheep were not clean as they left the farm. More importantly, 44 per cent of pigs, 66 per cent of cattle and 44 per cent of sheep were unclean as they arrived at the slaughter point, showing that the transport phase plays a role in the frequency of carcases which arrive for slaughter in an unclean state (15 per cent of pigs, 33 per cent of cattle and 28.7 per cent of sheep become dirty during the transport phase).

Season may play a role in determining how dirty animals are when they arrive for slaughter. Spring grass is known to affect the speed of passage of food through the digestive tract and therefore the dry matter of cattle and sheep faeces, and hot and humid conditions encourage pigs to wallow in their own faeces and urine in housing systems where natural wallows are not available and ventilation is inadequate to ensure thermal comfort. Figure 4 shows that 66 per cent of pigs are clean on arrival at the abattoir in winter compared with 45 per cent in summer. These figures are not available for cattle and sheep.

As there appears to be an effect of the transport phase on the frequency of dirty animals arriving at the slaughter plant it is appropriate to study the effect of transport time on those animals, particularly as the accuracy of the difference between animals leaving the farm dirty and those arriving for slaughter may be affected by observer effect changes between the haulier and the research team. Figures 5, 6 and 7 show the frequency of pigs, cattle and sheep arriving for slaughter in an unclean state on short journeys (< 1 hour) compared with longer ones. From these graphs it appears that 5 per cent more pigs are dirty on longer journeys, 20 per cent more cattle and 20 per cent more sheep.

Space allowance during the journey also appears to have an effect. For pigs (figure 8) those travelling at above the EU directive 95/29 stocking density requirement of 235 kg/m2 are more likely to be dirty (51.7 per cent clean) than those travelling at lower stocking densities (60.2 per cent clean). For cattle (figure 9) they are also more likely to be clean at lower stocking densities (33.7 per cent clean at high densities, 47.2 per cent clean at lower densities), and the picture is similar for sheep (59.2 per cent clean at high stocking density, and 69.5 per cent at low density, figure 10).

Vehicle design may also play a part in the production of animals which are unsuitable for presentation for slaughter. The number of decks on the vehicle in relation to cleanliness of animals arriving for slaughter are shown on figures 11, 12 and 13 for pigs cattle and sheep respectively. The increase in the proportion of the three species which are clean on arrival on single deck vehicles is 10.2 per cent, 11 per cent and 12.3 per cent compared with their counterparts which travelled on multi-deck vehicles.

Finally the source of stock has been analysed. Cleanliness frequencies have been compared for animals coming from markets and direct from farms to slaughter, for cattle and sheep only, as nearly all slaughter pigs are sold direct. Figures 14 and 15 show that cattle and sheep sourced from livestock auction markets are more likley to be clean than those sold direct (29.2 per cent more cattle and 26.2 per cent more sheep are clean from auction market than direct from farms).

Discussion

The results suggest that animals become more dirty during the transport phase, that pigs are more likely to arrive dirty in the summer, that transport time, space allowance, vehicle design and source of stock all have an influence on the presentation of clean livestock for slaughter.

There is a degree of concern that there may be differences in classification of dirty livestock between the haulier and research team, but all but the estimates of how dirty animals become during transport are based on the classification by the research team on arrival at the abattoir, who received training to reduce any observer effect. Some useful figures which give confidence that the estimated frequencies of dirty animals are fairly accurate are provided by the British Leather Confederation, who report that 73 per cent of cattle hides were contaminated with dung in in 1996 (Stosic, 1996). The estimated frequency from the survey reported here is 66 per cent which compares favourably with that of the British Leather Confederaton, and may indicate that the current survey in fact underestimates the size of the problem.

This information should, on further investigation, enable the livestock industry to alter practice to reduce the frequency of dirty animals arriving for slaughter. It merits further analysis as some of these factors may be confounded—for example journey length and source of stock, or vehicle design and journey length. Further work on management practice of animals in the last few days of life and during transport would help in the development of guidelines to reduce the numbers of cattle, sheep and pigs which are presented for slaughter in an unclean condition (66 per cent, 44 per cent, and 44 per cent respectively). There is widespread concern in the pig sector that pressure for change in production practice on (real or perceived) welfare grounds may favour those systems which are more likely to produce dirty animals.

Conclusion

This report contains some potentially useful information which deserves further scrutiny before it is reported widely. While there is ongoing work to reduce the food safety risk of the transfer of pathogens from the abattoir into the food chain, not enough is known about how to stop them reaching the abattoir in the first place. Pre-transport feeding and management practice is a particular area which deserves further investigation.

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4. Carlyle, WWH, Guise, HJ, Daly, SJ, Jones, TA and Bond, D (1996) *A national survey of transport conditions for cattle.* Report to MLC. Cambac JMA Research, Lower Cadleys, South Stoke, Reading, Berkshire RG8 0LX.

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Figure 1

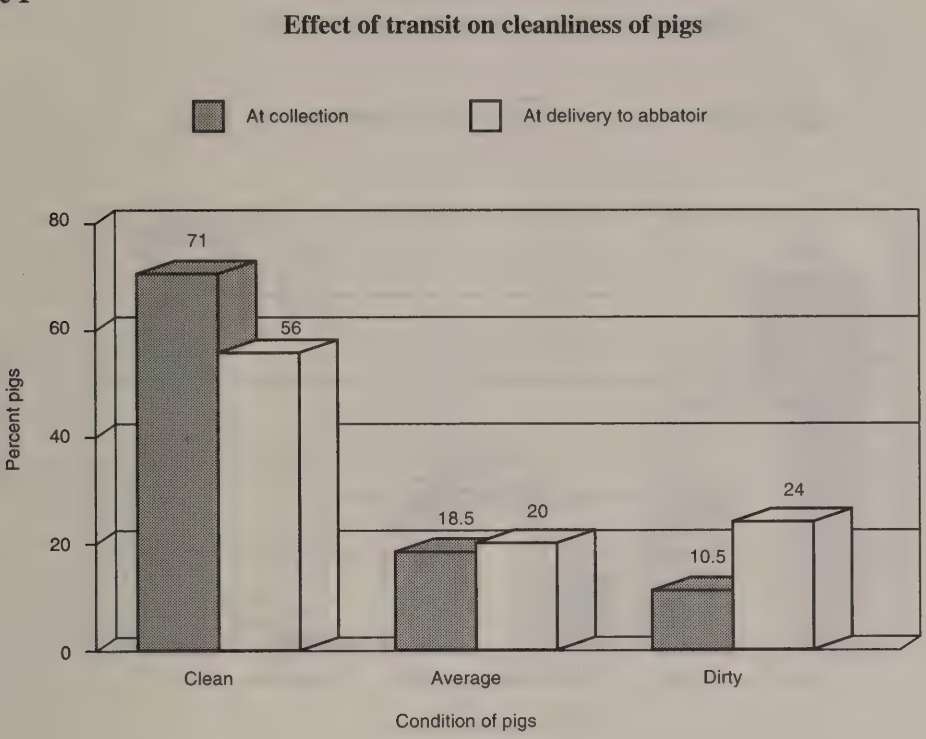


Figure 2

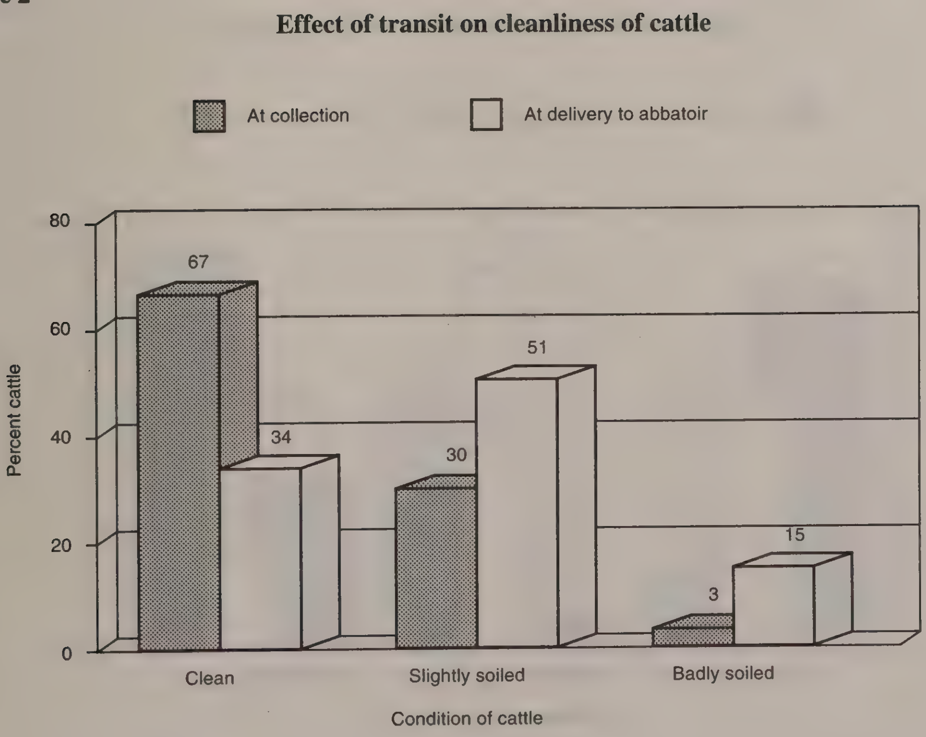


Figure 3

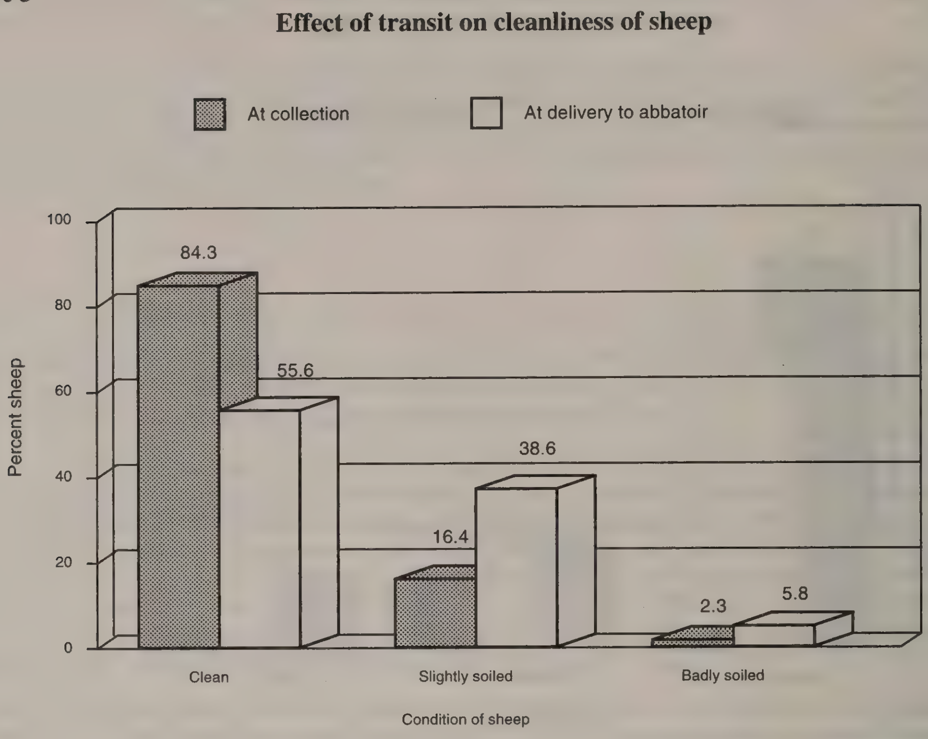


Figure 4

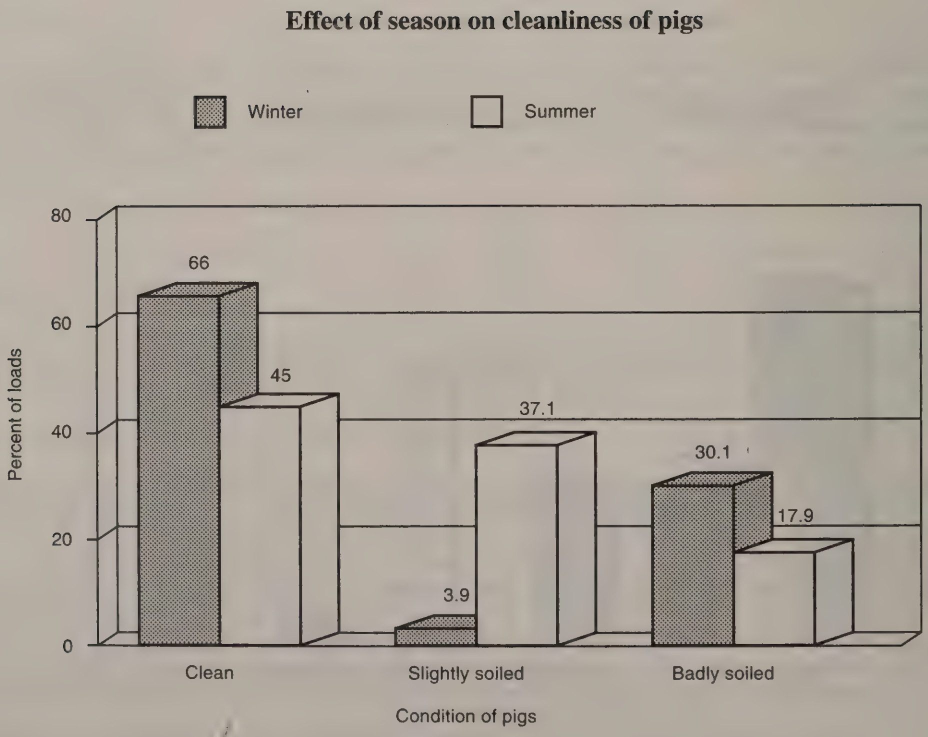


Figure 5

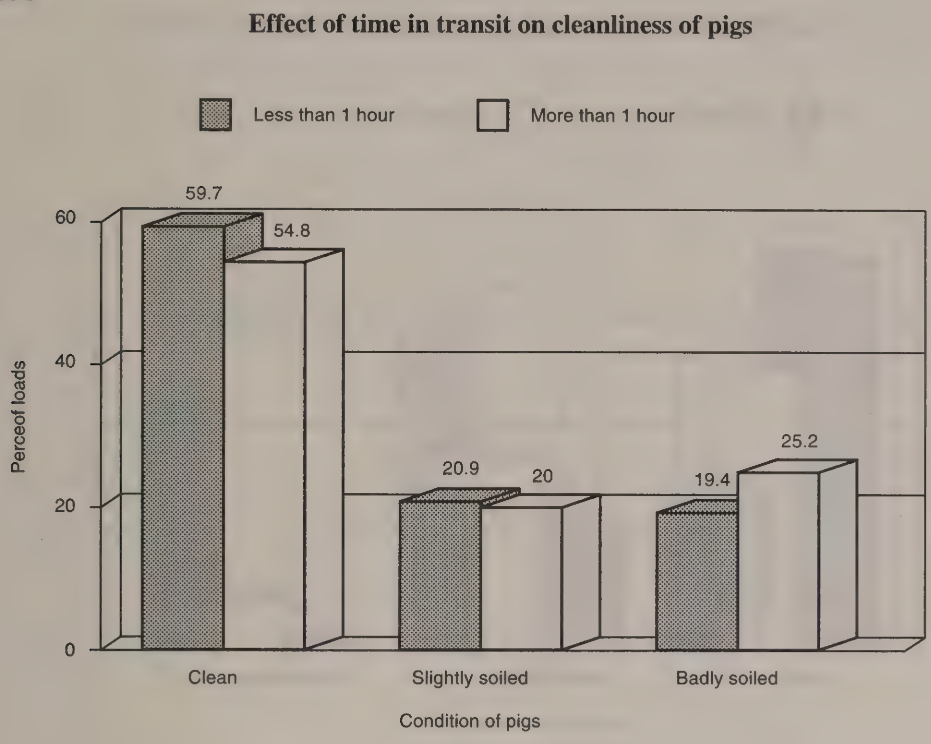


Figure 6

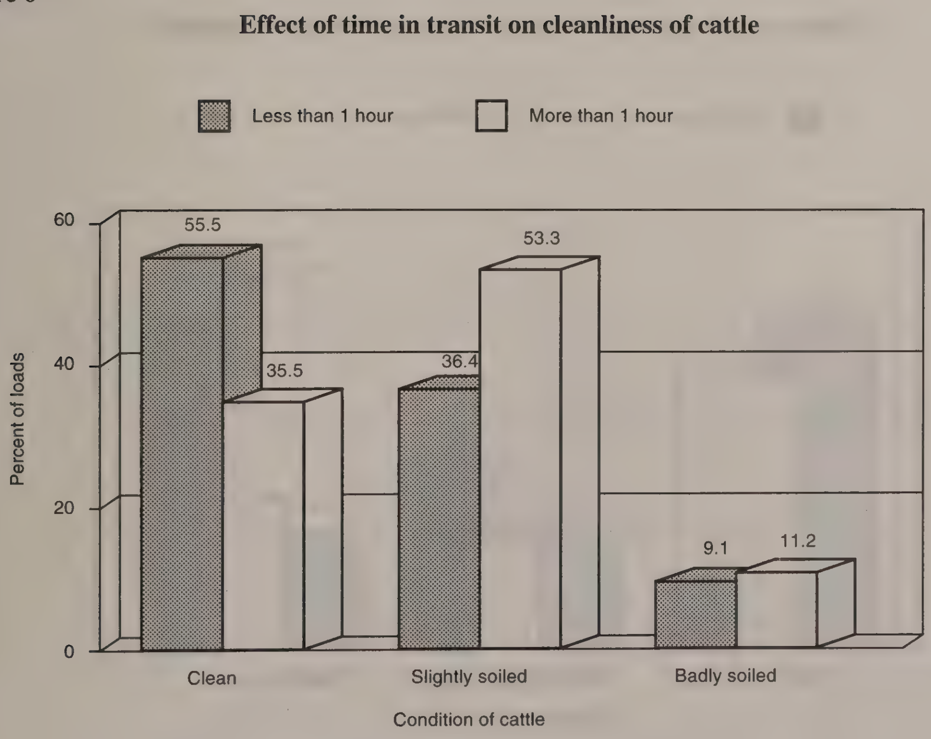


Figure 7

Effect of time in transit on cleanliness of sheep

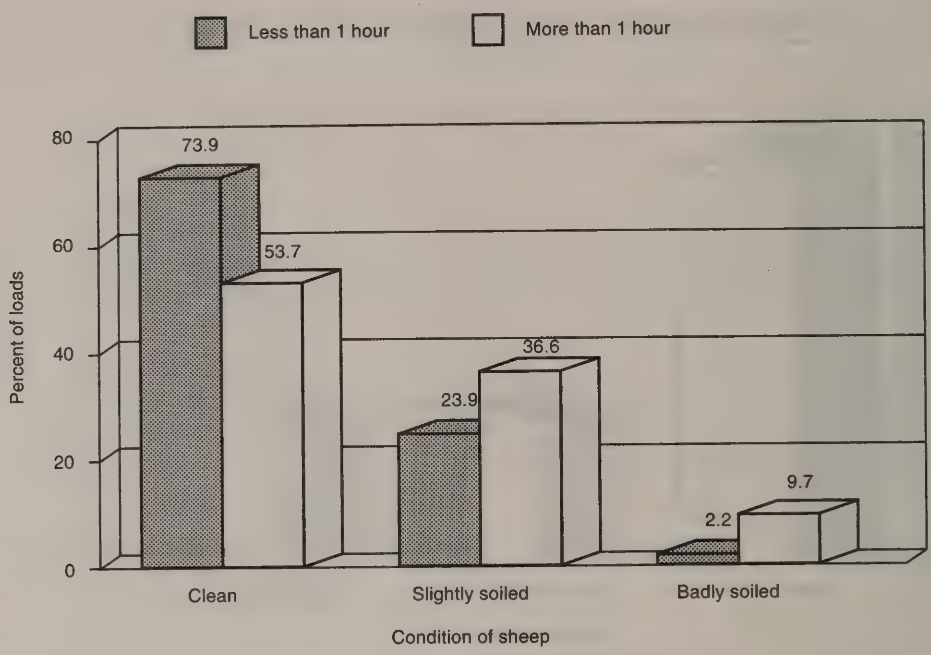


Figure 8

Effect of space allowance during transit on cleanliness of pigs

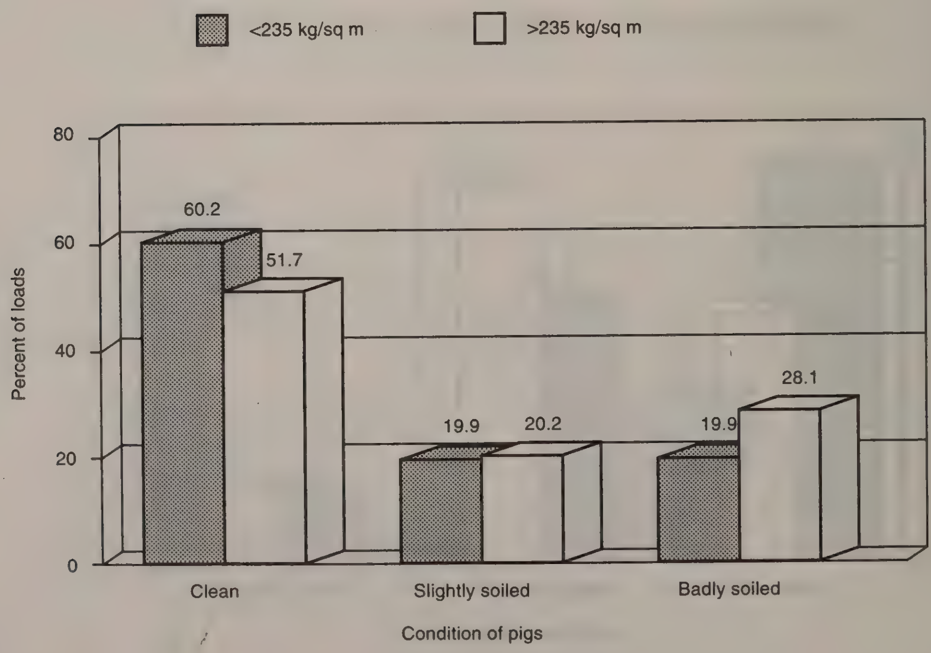


Figure 9

Effect of space allowance during transit on cleanliness of cattle

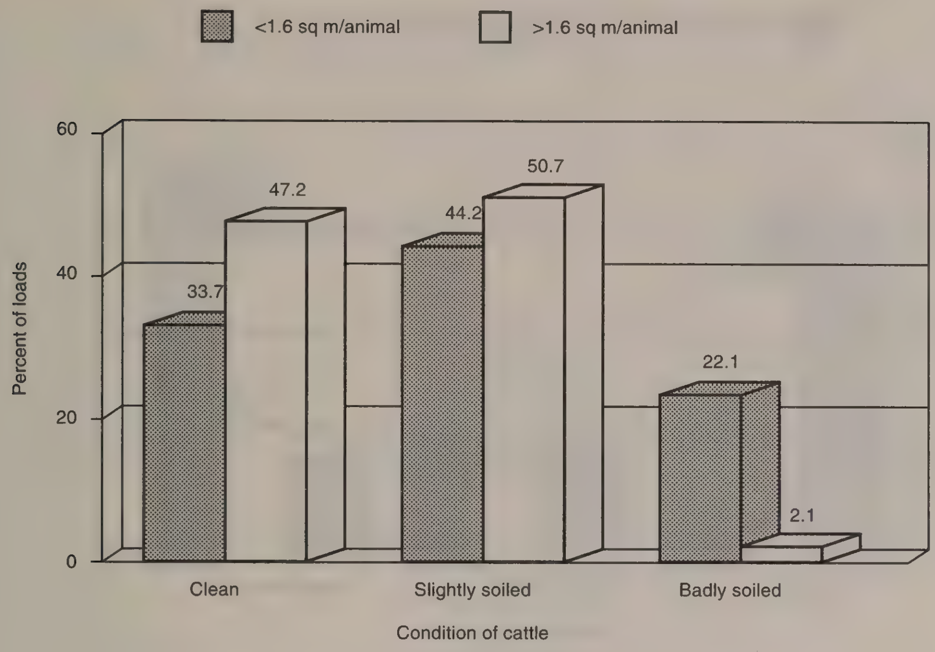


Figure 10

Effect of space allowance during transit on cleanliness of sheep

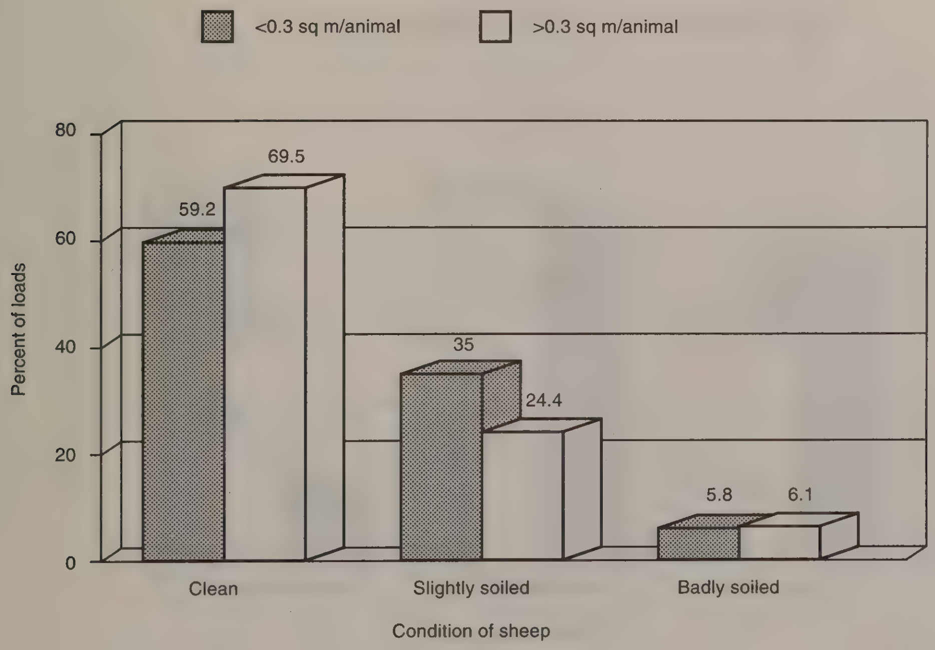


Figure 11

Effect of number of decks in transport containers on cleanliness of pigs

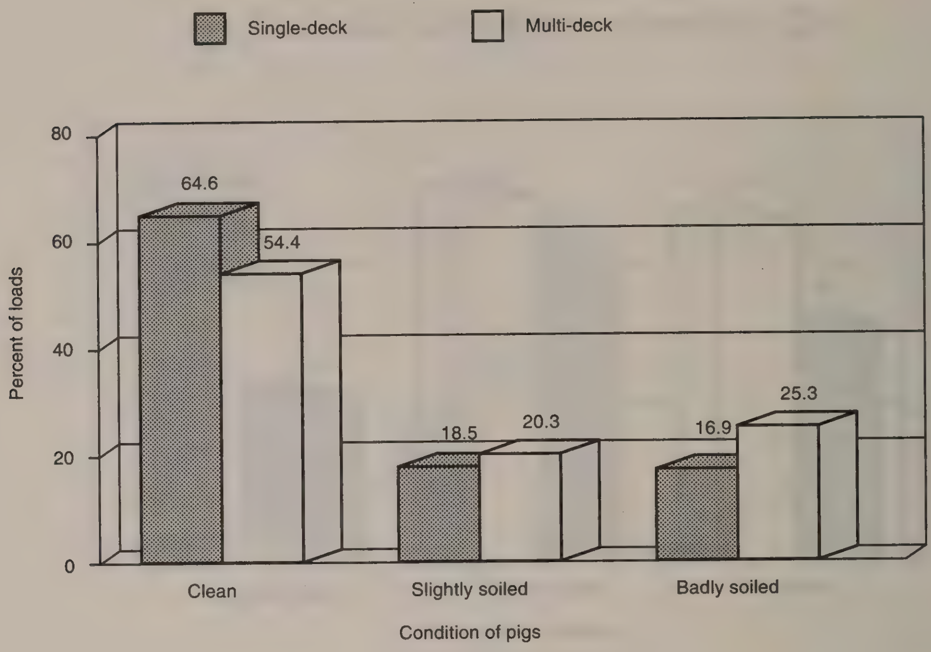


Figure 12

Effect of number of decks in transport containers on cleanliness of cattle

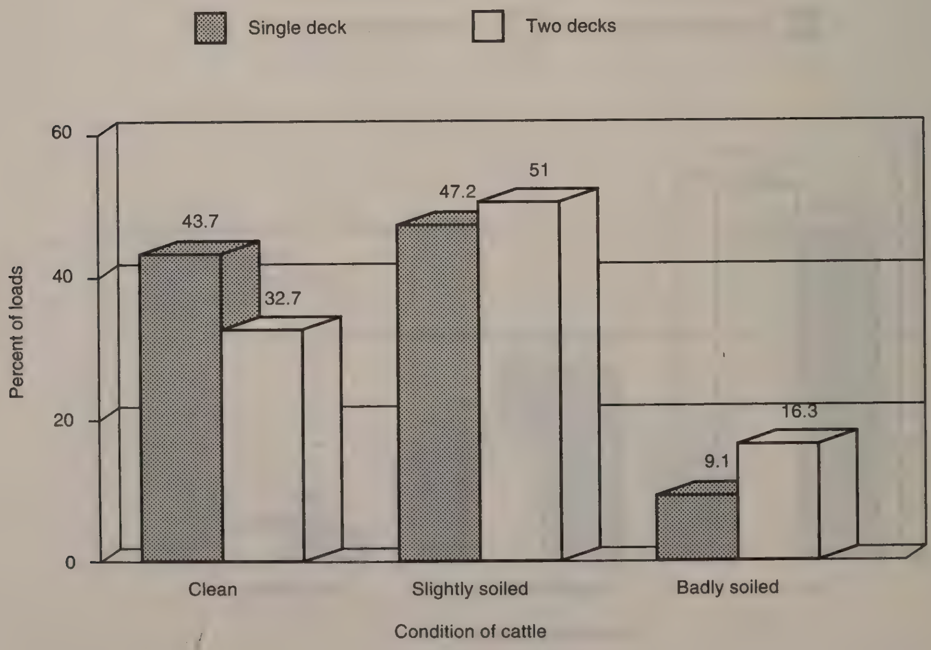


Figure 13

Effect of number of decks in transport containers on cleanliness of sheep

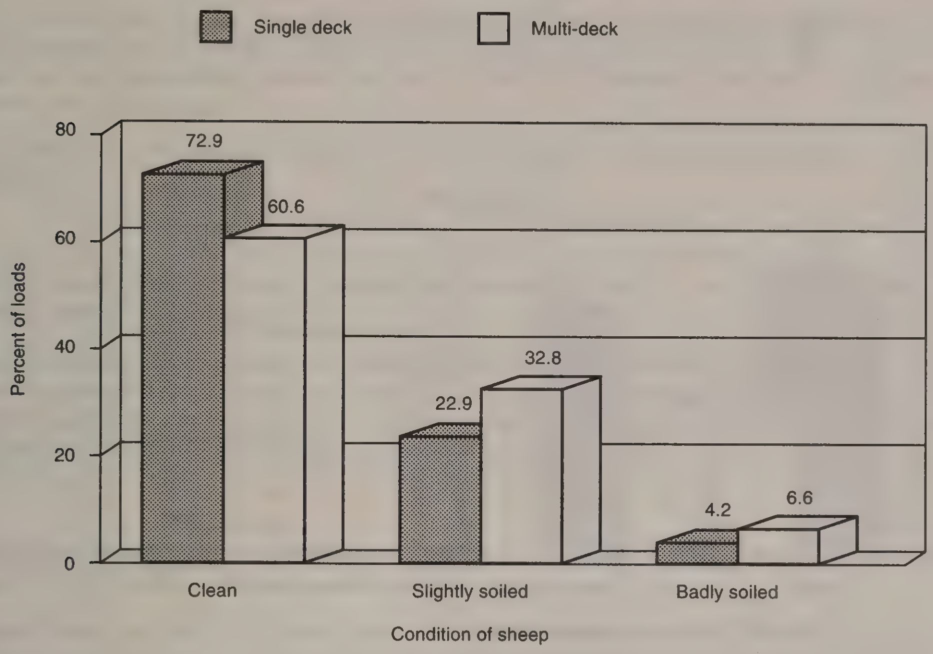


Figure 14

Effect of source on cleanliness of cattle

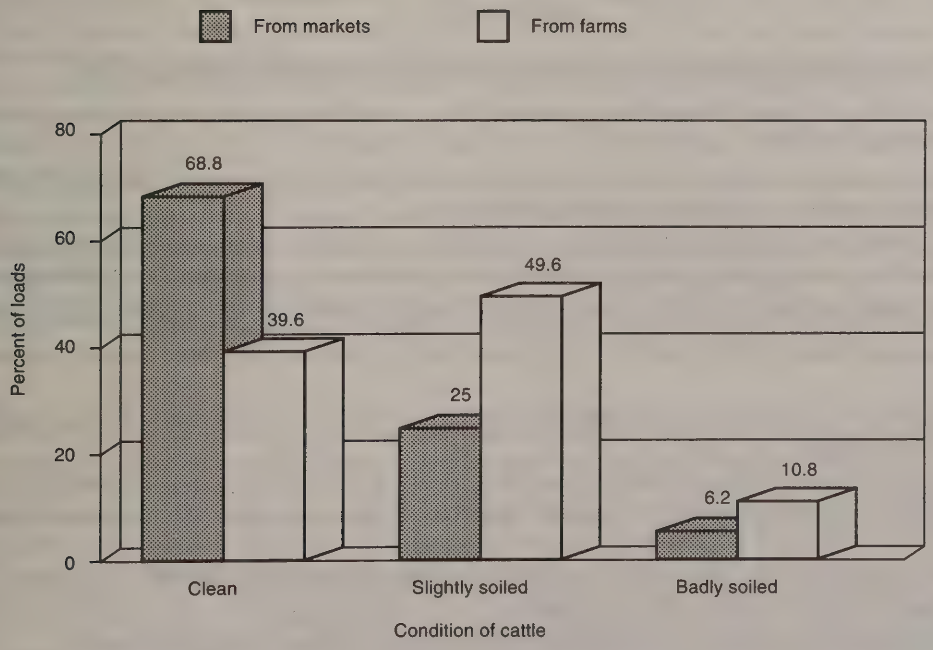
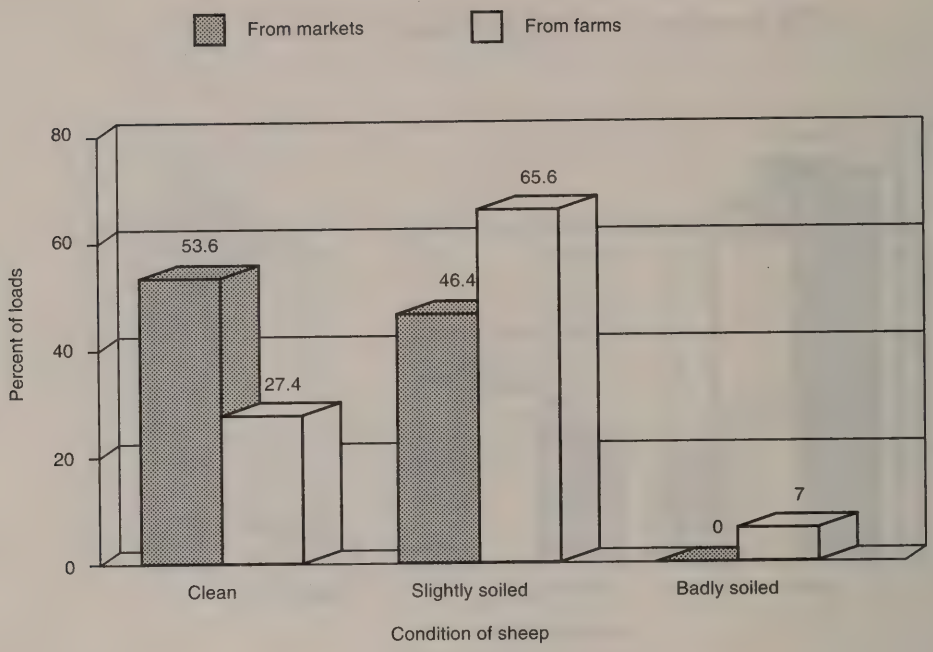


Figure 15

Effect of source on cleanliness of sheep



APPENDIX 31

Memorandum submitted by the Advisory Body for Social Services Catering (C38)

The Advisory Body of Social Services Caterers would like to make the following comments regarding the Food Safety Session 1997–98.

The terms of reference quoted are very wide ranging and may well result in one of those inquiries which goes on indefinitely without producing any significant results.

However, we believe that one significant risk to the public lies in the lack of emphasis on the registration of food premises. In our experience, which is based on a rural areas and is, we know is very different cities.

There is insufficient publicity given to the requirement to register before starting a new food business.

Special arrangements need to be made to assist proprietors of business for whom English is a second language.

Local Authorities have not been given sufficient resources to track down and deal with food premises, which have not registered.

There is a loophole in the process, in that it is the premises which have to be registered and not the people handling the food. This means that there is no control over the activities of people who hire village hall, school kitchens etc.

In our opinion the given risks to the public, the registration process should be extended to cover the act of catering for larger members and not just the premises.

We consider that the eventual aim should be to LICENCE both Caterers and Food Premises.

I trust this information will be of assistance to your enquiry.

16 October 1997

APPENDIX 32

Memorandum submitted by the Provision Trade Federation (PTF) (C39)

PTF represents importers, exporters and other traders within the UK in dairy products, meat products (mainly bacon, ham and other cured pigmeat products), and canned meat and fish, collectively known as provisions. Our membership covers over 80 per cent of the trade to, from and within the UK in dairy products, bacon and ham.

Our comments on the Agriculture Committee's issues as itemised in the terms of reference for the inquiry are:

1. *Recent trends in the incidence of bacterial food poisoning in the UK, and the effectiveness of the system of notifying cases of food poisoning.*

We do not have the competence to elaborate on this subject. However, as a responsible trade association we support any efforts to improve the capabilities of food authorities speedily to identify sources of food poisoning and to take necessary action to prevent future occurrences. This objective can only be met if there is an effective system for notifying cases of food poisoning.

2. *Significant gaps in current scientific understanding of, and statistical information on, food safety issues, and measures which would be taken to reduce these gaps.*

Again this is a very large topic upon which it is difficult for us to expound other than to express support for research to continue into these areas, preferably in a coordinated fashion. A National, or possibly European, strategy to identify research priorities and target funding into these areas would be welcome. Sometimes there is the impression that disproportionate funding is devoted to areas which may only affect a tiny percentage of the population, leaving unexplored other areas which affect larger groups of people.

3. *The level of food safety risk at all stages of the human food chain, and the appropriateness of the methods and resources employed to minimise food safety risk at the various points of the food chain.*

Little publicity has been given to the enormous strides that have been made over the past seven to eight years to reduce the food safety risks in the food processing industry which is the area of greatest relevance to PTF members many of whom carry out some level of processing in their businesses. This may be manufacturing of dairy or meat products or simply slicing and packing of bacon, ham and processed meats, or butter and cheese. Despite the advances, there is no room for complacency and developments are still being made towards perfecting risk management (HACCP) which has enormous advantages over strict and detailed legislation because it has the flexibility to enable introduction of improvements as these are developed. By contrast, detailed legislation tends to be inflexible and may preclude the use of new methods until the legislation has been amended. This usually takes years by which time there is the danger that it will have become out of date.

Similar risk management approaches can be adopted in catering and even domestic households. Training on basic hygiene needs to start at a much younger age. A great deal has been said before about the importance of reintroduction of domestic science in schools. This would be helpful, not just for domestic food preparation but also to provide a grounding for people who become involved in food handling on a larger scale at a later stage in life. The new food agency could include education in food handling as part of its remit.

4. *Any food safety implications of the presence of genetically-modified organisms in the human food chain, and the desirability and feasibility of labelling foodstuffs containing genetically-modified organisms.*

This subject is currently relevant to a minority of our members. We do not believe that there are significant food safety implications in relation to GM organisms currently being used in the food chain. Labelling which says "may contain" genetically modified organisms is not helpful to consumers because it will encourage unnecessary labelling of products which do not contain GMO's by those who wish to err on the side of caution. This will obscure the labelling of other foods for which there is a genuine reason to label for the sake of consumer choice. If there is a growth in the use of GMO ingredients there may come a point where more products are labelled than not. Common sense alone indicates that this cannot be in the consumer interest.

16 October 1997

APPENDIX 33

Memorandum submitted by the Biscuit, Cake, Chocolate and Confectionery Alliance (C40)

The BCCCA is the representative body for UK manufacturers of the products described in our title. Industry sales for the last year are in excess of £6 billion and Alliance member companies employ 64,000 staff.

The Alliance sector is a low-risk part of the food industry. There have been no incidences of food poisoning in the UK confectionery manufacturing sector in the last several years.

It is imperative that there is a coherent and integrated approach to food policy along the whole food chain. In the light of the creation of a Food Standards Agency, there are various thoughts as to where responsibility for food safety should lie. Regardless of the ultimate line of responsibility, it is imperative that the same body (whether Government Department or executive agency) must cover the whole food chain. This is essential in order to ensure that no gaps appear in the overall vigilance on food safety measures.

The responsibility for food safety is shared by all parties involved throughout the food chain. To this end, we acknowledge that levels of sophistication vary widely at different parts of the chain and according to the size of establishment involved. Thus, it is unrealistic to draw up specific rules for every contingency/application. However, legislation should be based on general principles for horizontal application, which are based on the HACCP principles.

In order to promote general awareness of the HACCP principles, food sectors should be encouraged to draw up codes of practice by way of guidance as to the application of hygiene and food safety legislation. This measure will assist smaller companies in attaining compliance, whilst it will also lead to uniformity of interpretation of the legislation.

The Pennington Group final report into the outbreak of *Ecoli* 0157 in meat and meat products in Scotland has clearly shown the need for an "education" programme throughout the whole of the food chain. This programme should be initiated by Government and should include, in particular, small manufacturers; small retailers; and consumers.

The terms of reference of the Inquiry refer to "any food safety implications of the presence of genetically-modified organisms in the human food chain, and the desirability and feasibility of labelling foodstuffs containing genetically-modified organisms". All applications for genetically-modified foodstuffs are rigorously scrutinised by the appropriate regulatory bodies. We have every confidence that all approved genetically-modified foodstuffs present no more food safety concerns than traditional foodstuffs. Thus, it is quite inappropriate to seek to label genetically-modified foodstuffs on the grounds of food safety. However, we acknowledge that manufacturers/retailers may wish to identify such products on the grounds that the consumer has a right to know. However, bearing in mind the ever-increasing demands for the limited space on product labels, such space should be prioritised for real food safety concerns, ie drawing attention to possible life-threatening allergens. The labelling of genetically-modified foods does not fall into this category; any suggestions to the contrary merely undermine the advantages of new technology.

16 October 1997

APPENDIX 34

Memorandum submitted by The British Association of Feed Supplement and Additive Manufacturers Ltd (C42)

This Association is concerned with the manufacture and supply of feed additives, either individually or in complicated premixtures, to the manufacturers of compound feedingstuffs, whether commercial companies or situated on farms.

In European terminology a "feed additive" covers vitamins, trace elements (eg iron), colourings, preservatives etc and some substances which the UK has to date licensed as Pharmacy, Merchant List (PML) products, mainly for preventive medicine, under the 1968 Medicines Act.

Since joining the European Community the UK has been subject to the Directive 70/524/EEC "concerning additives in feedingstuffs" and its subsequent amendments, the latest of which is Directive 96/51/EC (called the 5th Amendment ie referring to the number of different texts made by the Council of Ministers). For many feed additives the controls include dosages allowed and for particular substances (PML products in UK) these controls have duplicated those allowed under the Medicines Act. Regulations made under this Act control the development, manufacture, distribution and use of such feed additives and these controls are now analogously extended by another Directive, 95/69/EC "laying down the conditions and arrangements for approving and registering certain establishments and intermediaries operating in the animal feed sector . . .".

The UK enforcement of Regulations affecting PML feed additives is carried out by a special inspectorate of the Royal Pharmaceutical Society of Great Britain and involves approval of the site, plant procedures, records, efficiency of mixing etc. The Directive (95/69/EC), besides mimicking this, takes approval or registration to every sector and feed additive listed from manufacture, both inside and outside the European Union, to every distributor, manufacturer of premixtures (feed supplements) and compound feedingstuffs, both commercial and on farm. A further Directive (95/53) aims at uniformity of enforcement of the legislation throughout the Member States.

With this wealth of legislation it is difficult to envisage how the manufacture, supply and use of feed additives could be altered to achieve greater safety for routine production of high quality, nutritious, edible animal products.

5 October 1997

APPENDIX 35

Memorandum submitted by the Biotechnology and Biological Sciences Research Council (C44)

The Biotechnology and Biological Sciences Research Council (BBSRC) promotes and supports high-quality basic, strategic and applied research and related postgraduate training relating to the understanding and exploitation of biological systems. As such the Council is one of the major funders of research on the biological aspects of food safety in the UK. The major contribution of BBSRC-supported science to food safety is in the area of microbiological safety and transmissible spongiform encephalopathies. The following submission concentrates on these two areas in relation to that aspect of the terms of reference which addresses significant gaps in scientific understanding.

— significant gaps in the current scientific understanding of, and statistical information on, food safety issues, and measures which could be taken to reduce these gaps.

MICROBIOLOGICAL FOOD SAFETY

Background

1. BBSRC recognizes that the provision of safe food depends on the maintenance of high standards of microbiological hygiene throughout the whole food chain from the raw materials of plant and animal origin to processing, distribution, retail and consumer use. The occurrence of bacteria in virtually all environmental niches, coupled with the inherent ability of those reponsible for food-borne illness to adapt to changes in their environment and exploit new ones poses a constant problem. As manufacturers move away from the use of traditional preservation techniques, many of the accepted principles governing microbial growth and survival can no longer be assumed to hold true. Innovations in food manufacturing must therefore be supported by an understanding of how food-borne microorganisms react to changed processing technologies and storage conditions. The research supported by BBSRC aims to provide the fundamental science to enable Government, health authorities and the food industry to develop more effective strategies for controlling food poisoning and food spoilage organisms at all stages from the farm to the consumer.

Current research

2. It is essential that basic, high quality research is carried out on those features of food-borne organisms that make them a threat to the food supply. Such research is necessary to provide answers to new problems that may arise and avoid the possibility of gaps arising in our understanding of food safety issues. The programme of research funded by BBSRC provides the underpinning science that both equips the food industry with the ability to control pathogens, and supports MAFF objectives on food safety. It was developed in consultation with both users and other public sponsors of food safety research. BBSRC works closely with MAFF and the Department of Health to ensure coordination of effort and scientists sponsored by the different sponsors are encouraged to network and collaborate whenever possible.

3. BBSRC's support for food chain microbiological safety is mainly through the Agri-Food (AF) funded work on the control of transmissible contamination through the food chain and covers two aspects. The first is concerned with food-borne zoonotic organisms and in particular mechanisms of pathogenesis and transmission. The second is aimed at understanding the mechanisms employed by food-borne pathogens to survive in the food environment during food processing, and to grow under conditions of storage and distribution.

4. Priorities for current BBSRC supported research are: microbial survival in food environments; mechanisms of microbial inactivation; and mathematical development of an analytic framework aimed at the modelling of risk for food microbial contamination hazards. Current research, conducted by university groups and at the Institute of Food Research includes work on the predictive microbiology in process environments, and on the physiology and genetics of *Salmonella, Campylobacter* and spore forming bacteria including *Clostridia* and *Bacillus*.

5. Research on the foodborne zoonoses is primarily focused at the Institute for Animal Health where there is a significant programme of research on *Salmonella* in poultry and cattle. This includes work on virulence, protective immune responses, mechanisms of *Salmonella* pathogenesis, resistance/colonisation, and genetic strategies towards control.

6. Complementing these activities is a significant amount of BBSRC-funded research which underpins the microbial food safety research. This includes generic research on microorganisms, in particular using *Ecoli* as a model organism, and work on animal disease pathogenesis which is relevant to the research on zoonotic organisms.

Future needs

7. The biological mechanisms that give rise to new virulent strains of food borne pathogens and the selective pressures in the food chain that encourage their survival are poorly understood. For example, there is no satisfactory explanation for the sudden emergence of *Salmonella enteritidis* as the predominant cause of *Salmonella* infections in the UK in 1988, or its eventual replacement by *Salmonella typhimurium*. It is clear that such serotype predominance is cyclical and that it is impossible to predict which serotype will next predominate. In addition, the population dynamics of the major foodborne pathogens such as *Campylobacter jejuni/coli* are largely unknown. Important questions that remain to be resolved include; whether the strains in poultry represent different clones from those in humans, and whether some strains are more virulent to humans than others.

8. With respect to the control of salmonellas, the use of chemotherapy has had variable results. Where health problems for the animal arise, the use of antibiotics is indicated. However, in the carrier state, which is the norm in poultry, antibiotic use can lead to increased shedding of bacteria. The inherent problems with chemotherapeutic agents are transmissable drug resistance and drug residues both of which give rise to public concern.

9. In view of such problems, alternative strategies for controlling the incidence of foodborne pathogens in farm animals are likely to favour biological approaches such as vaccines, selective breeding programmes for resistance to disease or enhanced immunological responsiveness and specific inhibition of the replication of the pathogen. Progress in these areas will depend on extending our knowledge at a fundamental level on the molecular basis of host specificity, mechanism of pathogenesis, host immunity and disease resistance.

10. Emerging findings on the immunogenic proteins of *Salmonella* indicate that additional research on the immunology of *Salmonella* could accelerate progress towards the development of a vaccine.

11. In the longer term, the prospects for selective breeding for resistance to *Salmonella* have improved considerably thanks to recent work at IAH demonstrating the genetic basis for resistance. This opens the way to identify the gene responsible and the subsequent development of a genetic marker for use in future selective breeding programmes.

12. Coupled with new approaches to control the transmission of zoonotic organisms is the long standing requirement for additional research to underpin the development of faster, more sensitive and more specific tests for *Salmonella*.

13. Much has been said about the need to improve hygiene on the farm and intensive systems of agriculture have been implicated by some as a major cause for increased risk of cross-contamination. It should be noted that replacing intensive systems of husbandry with extensive systems will not necessarily lead to a reduction in the incidence of *Salmonella* since this genus is truly ubiquitous in the external environment.

14. Turning to the survival of pathogens in food environments, there is a poor understanding of the factors in food that affect the ability of pathogens to survive in the non-growing state. Recent outbreaks of *Escherichia coli* 0157 associated with salami and apple juice point to the importance of understanding the ability of pathogenic microbes to remain viable for long periods in conditions of reduced water activity or acidity.

15. Although substantial progress has been made towards predicting the growth and inactivation of the major foodborne pathogens, significant gaps in the underlying data remain and there is a need to improve the models by making them easier to use.

16. The post-ingestion phase of food may also be important in disease aetiology. Dietary manipulation of an individual's gut microflora, for example, by eating live yoghurt, may confer a number of advantages. Although there are a number of prophylactic possibilities that claim to offer protection against food associated pathogens, such claims need to be scientifically substantiated and the mechanisms by which protection is conferred need to be established.

17. Research on the biological aspects of foodborne pathogens should be complemented by engineering approaches to reduce the risk of transmission throughout the food chain. In particular, more research is required that will provide the basis for novel methods to inactivate bacteria and to reduce contamination. Knowledge is lacking on the mechanisms of the transfer and dispersion of organisms in confined environments such as animal houses, processing plants and storage facilities.

TRANSMISSIBLE SPONGIFORM ENCEPHALOPATHIES

Background

18. It is highly likely that the transmissible spongiform encephalopathies (TSEs) will remain a problem for agriculture and an issue of safety in the human food chain even if BSE is brought under control and eradicated. The need to understand the biology of TSEs has been given further impetus since the demonstration that TSEs can cross the species barrier and the evidence which now indicates that new variant CJD and BSE are likely to be caused by the same agent.

Current Research

19. BBSRC supports high quality basic and strategic research aimed at understanding the biology and pathology of the TSEs. The research is financed through core funding at IAH and the Biology of the Spongiform Encephalopathies programme (BSEP) which was launched in 1990 in response to growing concern about the extent of the BSE epidemic. Present research priorities resulted from those areas in which BBSRC had significant existing strengths. These are:

- the nature of the infectious agent;
- the molecular basis of strain variation in scrapie;
- the use of transgenic animal models for studies of the nature of the infectious agent, transmission and the species barrier;
- the molecular basis of pathogenesis of the TSE agents; and
- the genetic control of host animal susceptibility.

20. BBSRC was awarded additional funding for research on TSEs for three years from 1997–98 (£3.4M for 97–98 and £2.5M for each of the succeeding two years). This is being used to strengthen the core programme at IAH through a programme grant focusing on the pathogenesis and epidemiology of sheep scrapie, and to continue to support competitive research grants in the priority areas addressed by the earlier stages of the programme. The BBSRC programme now includes a significant investment in protein science.

21. Coordination of the UK effort in TSE research is being implemented through the DH/MAFF TSE Funders Group chaired by Professor Swales, and through the High Level Committee chaired by Sir Robin Butler. BBSRC has played an active role in the TSE Funders Group in developing the national strategy for TSEs research. The Funders Group has provided an effective forum for coordinating research and identifying gaps in current activities which need to be addressed. Exchange between researchers as a result of the annual BBSRC BSE Programme workshop has also served to identify gaps at a detailed level of science. From 1998 onwards the workshop will include researchers funded by MRC, MAFF and other sponsors.

Future needs

22. Despite the significant programme that has been mounted, considerable gaps in our knowledge and understanding of TSEs remain. However, it should be recognised that the starting base of knowledge was narrow and the area of research is highly specialized with substantial requirements for containment and other specific facilities.

23. At the outset nothing was known about what organism or agent was responsible for BSE, nor was there a diagnostic test other than histopathology *post mortem*. There was an appreciation that TSEs in humans were rare (in the case of CJD the incidence rate was one in a million) and had very long incubation periods, measured in years. There was reasonable information on the pathology of scrapie and it was known that the infective agents were extremely resistant to conventional decontamination procedures. The following list is not exhaustive but illustrates the key areas where substantial gaps in our knowledge remain:

- The nature of the infectious agent.
- Method(s) and route(s) of transmission and the barrier to transmission of TSEs between species.
- The nature of "processing" the agent prior to invasion of the nervous system.
- Tropisms of the agent.
- Significance of strain variation of the agent.
- Normal function of prion protein and the role of prion protein in pathogenesis and pathology.
- Molecular basis for the transformation of normal prion protein to the abnormal form.
- Genetics of susceptibility of the host.
- Epidemiology of TSEs.
- Methods for deactivating TSEs and decontaminating equipment.
- Controlling/curing infection.
- Non-invasive, early diagnostic tests.

Progress in some of these areas is being made but experience has shown that our lack of understanding of prion disease means that progress will pose additional questions for the future.

20 October 1997

APPENDIX 36

Memorandum submitted by Compassion in World Farming (C48)

FACTORY FARMING AND HUMAN HEALTH

Introduction

Consider the conditions on the UK's factory farms—for example in the intensive meat—chicken sheds, from where we get nearly all of our chicken: animals crowded together so much that the floor is scarcely visible, condemned to spend their brief lives often blistering their feet by standing in their own excrement, and their lungs by breathing an atmosphere heavy with ammonia fumes, dust and bacteria. One would scarcely be surprised if disease was rampant, so one should probably not be surprised that much of the meat we obtain from these animals harbours disease-causing organisms.

Much of Our Meat is Infected

There is evidence that the meat from farm animals is frequently contaminated with disease-causing organisms:

- one in three chilled, raw chickens on retail sale in the UK has been found to be contaminated with *Salmonella* (1);
- up to 48 per cent of fresh chickens on sale in the UK have been found to be contaminated with *Campylobacter* (1);
- in one survey, 11 out of 12 turkeys examined contained *Campylobacter* (1);
- surveys of retails outlets in London have found Verocytotoxin-producing *Ecoli* in 22 per cent of raw beefburgers and 25 per cent of raw pork sausage (2).

Compassion in World Farming (CIWF) believes that levels of contamination of UK meat with disease causing bacteria are unacceptably high.

Bacterial Contamination Seems to Originate on Farms

There is evidence for the origin of much of the contamination on the farm, in particular where animals are intensively reared:

- research by the Food Microbiology Research Division of the Department of—Agriculture for Northern Ireland has found that that "those animals which are intensively reared and slaughtered young will have the greatest potential for carrying pathogents" (3);
- *Salmonella* and *Campylobacter* contamination has been found on walls, feeders, drinkers, floors, insects, water and feed at intensive poultry farms (4, 5, 6);
- scientists have found a one month lag between warm weather and increased incidence of food poisoning, suggesting that responsibility for contamination lies not with the consumer, but higher up the supply-chain (7); and
- research has found higher than expected levels of antibodies to *Campylobacter* in personnel in poultry and red meat plants, suggesting that the carcases being processed are significantly contaminated by the time the animals arrive at the abattoir (8).

CIWF believes that urgent actions must be taken, on the UK's factory farms, to bring down the levels of disease-causing bacteria. These actions need to include improved hygiene (so that animals, for example, are not forced to lie or stand in their own excrement), more access for animals to natural daylight, fresh air and the outdoors, and significant reductions in overcrowding.

Food Poisoning is Increasing Relentlessly

Advice on kitchen hygiene, and thorough cooking, is clearly proving inadequate in the face of contamination "upstream" of retail outlets; this is manifest in huge rises in the incidence of food poisoning:

- according to the Office of National Statistics, food poisoning in England and Wales has increased six-fold over the past 15 years (9);
- according to Scottish Office figures, there were 858 food poisoning cases in Scotland in 1970; in the first 10 months of 1996 (that is, prior to the major outbreaks of *Ecoli* 0157) there were 8,408 cases (10); and

— food poisoning, in England and Wales alone, is estimated to be costing industry and the taxpayer somewhere between £1 billion and £3 billion every year, based on figures from the Public Health Laboratory Service (11, 12).

CIWF believe that significant reductions in the levels of food poisoning in the UK will only be made when hygiene and overcrowding are improved on farms, allowing less highly contaminated meat to be made available to customers.

Problems with Antibiotic Use

According to the World Health Organisation, more than half of the total production of antimicrobials world-wide is currently used on farm animals, with a large proportion being administered not to treat disease but to promote growth. There are a number of potential human health risks:

— there is evidence which suggests that the use of some antibiotics to promote the growth of farm

— Dr Bernard Rowe of the Central Public Health Laboratory has said: "The use, misuse, or overuse of antibiotics in animal husbandry is creating a selective pressure which is encouraging the emergence and persistence of resistant, multi-resistant strains of *Salmonella* in food animals which then go into the food, causing epidemic spread not only on the farm but also eventually in us" (16);

— administration of an antibiotic to farm animals to promote growth can increase the animals' susceptibility to *Salmonella* infection (17);

— residues of antimicrobial sulphonamides have been detected in UK pigmeat, above maximum permitted levels, every year between 1990 and 1996 (18,19); there have been reports that sulphonamides can impair kidney function, and a study in the USA has reported a link with thyroid cancer (20);

— scientists should investigate as a matter of urgency the possibility that administration of growth promoting antibiotics to farm animals might be risking an explosion of disease-causing bacteria such as *Ecoli* 0157, by knocking out naturally-occuring bacteria which normally hold these pathogens in check; and

— scientists in 1996 discovered "alarmingly high" levels of mutation in *Ecoli* 0157 and *Salmonella*; some mutation seemed to be via horizontal transmission of genes between bacteria (21). CIWF is concerned that the overcrowding of animals in factory farms, coupled with very high levels of antibiotic use, may constitute an uncontrolled experiment in bacterial genetic engineering on an enormous scale. We strongly recommend that the implications for human health are investigated as a matter of urgency.

CIWF believes that it is unethical to administer growth promoting antibiotics to farm animals which are already suffering as a result of unnaturally high growth rates brought about by selective breeding. The human health consequences of the widespread use of growth promoting antibiotics are also poorly understood, and their use should be discontinued.

The Widespread Misuse of Beta-agonists (Prohibited for Non-therapeutic Use)

Beta-agonists (such as clenbuterol—"Angel Dust") are being widely misused in some EU countries to increase the amount of muscle in farm animals. These substances can have damaging effects on human and animal health:

— increased heart rate and tremors have been reported in people in France and Spain, following consumption of calf and beef liver containing clenbuterol residues; the Spanish outbreak involved 135 people (22);

— an Irish veterinary expert has warned that residues of clenbuterol in meat might nullify the effects of medication taken by people suffering from blood pressure disorders, and would be deleterious to people with heart problems (23);

— meat and paté imported into the UK have been found to contain clenbuterol (24, 25);

— some beta-agonists can cause increased incidences of lameness, hoof lesions and hind-limb paralysis in pigs (26, 27, 28, 29); and

— offences linked to the misuse of clenbuterol and related substances have been reported in the United States, Germany, Holland, the Republic of Ireland and Northern Ireland.

CIWF believes that the potential for adverse effects of beta-agonists on animal and human health means that their use for growth-promoting purposes should continue to be prohibited.

THE EU HORMONE BAN

In 1988, the EC prohibited the importation into the EU of meat from animals administered hormones as growth promoters. Several countries, including the US, are currently petitioning the World Trade Organisation to overturn this ban.

Professor Sir Richard Southwood has recently declared his support for the EU hormone ban, noting: "We have ample supplies of meat and milk . . . hormone treatment of cattle is not necessary" (30).

There is ample evidence of adverse effects of anabolic hormones on animals' well-being:

- trenbolone and several steroid hormones have been found to be strong promoters of melanoma (tumours) (31);
- trenbolone and testosterone have been shown to be mutagenic (32);
- trenbolone acetate has been associated with testis, ovary and uterus abnormalities in pigs, and with liver abnormalities in other animals (33,34);
- calves given oestradiol, testosterone and trenbolone develop cysts in two-thirds of case (35);
- zeranol-implanted heifers have increased rates of pregnancy-loss (36); and
- the bones of feedlot steers given zeranol have decreased load-bearing capacity (37).

Anabolic hormones are used in the feedlots of the United States, Canada and Australia to make cattle put on more weight following castration. Castration is used to allow cattle from many different farms to "mix easily" in the feedlots.

CIWF does not believe that animals' health should be jeopardised by the administration of anabolic hormones, in order to facilitate the imposition of an unnatural, intensive farming regime. Far from the EU hormone ban being lifted, CIWF would like to see the administration of anabolic hormones to farm animals for growth promoting purposes banned world-wide.

REGULATING FOOD SAFETY IN THE UK

Good farm animal welfare and food safety are indivisible—they are two sides of the same coin. Whilst the UK Ministry of Agriculture should retain its responsibilities for setting animal welfare policy, and for enforcement, CIWF also believes that the new Food Standards Agency should have farm animal welfare within its remit:

- the Food Standards Agency should seek standards-driven improvements to food safety, and these standards must encompass farm animal welfare, if food safety and farm animals are properly to be protected;
- the Food Standards Agency should be responsible for publicly auditing standards of animal welfare agreed with the Ministry of Agriculture, so that farms can demonstrate to their customers in the supply-chain that they are producing food which is both safe and humanely produced; and
- the Food Standards Agency should be active in driving animal welfare standards upwards over time.

Other countries have shown that improved animal welfare standards can be part of a modern food economy, and increasing consumer expectations in the global market will mean that better standards are not only a moral expectation but an economic necessity. The challenge for the UK farming industry is to seize this competitive advantage—for even if it drags its feet now, the signs are there that UK farming will eventually be forced down this path, by unstoppable consumer pressure.

21 October 1997

NOTE

This paper is a summary of a more detailed report, "Factory Farming and Human Health", published by Compassion in World Farming Trust in August 1997.

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APPENDIX 37

Memorandum submitted by The Institute of Horticulture (C50)

This submission covers only those aspects of food safety arising from the consumption of horticultural food crops ie fruit, vegetables, salads, edible fungi, sprouted seed eg alfalfa and mung beans and fresh herbs.

The incidence of food poisoning arising from horticultural products is very low when compared with other products eg poultry and cold meats. The industry is aware of the hazards which fresh produce could present to the health of its consumers.

The few reported incidents which have caused concern in the last 10 years arising from bacterial or viral sources have been due to contaminated water (bean sprouts), the transmission of hepatitis from a food handler (frozen raspberries), bacterial contamination (strawberries USA), and imported Iceberg lettuce from Spain.

Illness arising from pesticide residues or high levels of chemicals eg nitrates in leafy salads is recognised as being either extremely low or difficult to prove. The industry took immediate steps to reduce the use of organo-phosphorus insecticides in carrots when unsatisfactory, but not health endangering levels were found.

The major risks of bacterial contamination come from the water supply used in crop production and preparation and from the soil or other substrate on which the crop is produced. These are naturally occurring hazards of which producers and consumers should be aware. More research is required on the occurrence, longevity and persistence of soil and water borne pathogens.

Products which are eaten raw in an uncooked state present a higher risk than those which are cooked. Washing of raw product using a final rinse of potable water reduces the risk considerably but some products eg soft fruit and edible fungi may not be washed prior to consumption and these could present greater risk.

Education of the consumer to wash all horticultural produce to be eaten raw should include caterers and restaurants serving the public in order to reduce the naturally occurring risks of contamination. Food hygiene should be presented in schools at an early stage of learning and should form an essential part of the National Curriculum.

In the UK the current legislation provided by the Food and Environmental Protection Act (1985) and Food Safety Act (1990) together with the requirements of major retailers ensure that the UK has probably the highest standards of any country of food safety in the horticultural crops it produces. It is estimated that the major retailers ie supermarkets and multiples, have almost 80 per cent of the UK fresh produce market and are therefore a very strong influence on hygiene and food safety standards for the whole industry.

This high standard of food safety extends also to those crops grown abroad specifically for sale to UK retailers who seek to impose the same hygiene and food safety requirements on overseas suppliers as those practised in the UK.

The benefits of genetic manipulation of food crops to reduce pesticide usage and product deterioration must be stressed. The concerns of certain pressure groups regarding genetic manipulation of food crops must be taken into account and the use of animal genes in the modification of food crops discouraged. Where practical, consumers should be made aware at the point of sale as to the products on offer which have been genetically modified.

The UK horticultural industry in collaboration with the major retailers have shown a remarkable degree of self regulation, often in advance of and beyond the legal requirements. This is exemplified in the NFU—Retailer Protocols for Integrated Crop Management and the Code of Practice for the use of Pesticides issued by the Fresh Produce Consortium in association with growers, retailers and official bodies such as MAFF.

The above points are a summary of our views and we would be willing to provide more detailed information should it be required.

22 October 1997

APPENDIX 38

Letter to the Committee Chairman from Mr K H Harrison (C51)

TOXIC WASTE INDUCED BSE AND CJD

The continued Community Health dangers surrounding BSE arise from Public perceptions that the source has not been proven, and now my own concerns have been confirmed by Professor Colin Blakemore of the British Association at this weeks Science Conference, who now seeks a Judicial Review, as also one for your Committee. Indeed as a former Senior Engineer on the Port Line, (Cunard) Refrigerated New Zealand and Australian Meat run, the extreme care and Hygiene associated with their Abattoires and our Transport and Delivery to London Docks was a bye word in Care where the meat was similarly protected. Through "Economic self-interest" these imports were seriously diminished, and Farmers Subsidies and Profits rule with unhygienic meat conditions. In this respect, I am satisfied that the evidence already available in the context of Cement Kiln associations with Animal Feed and Fertiliser provides the answer to this deadly scourge.

In all respects it is clear that the Castle Cement Clitheroe Ribble Valley Cement Works is the Major Factor in the spread of BSE within our Cattle and progeny, with ultimate development of CJD, a forecast I made many years ago in Opposing Incineration on the edge of Droitwich Spa within your Constituency. Clearly the Incineration of Water Heavy BSE affected Cattle would have produced Toxic Heavy Vapours affecting the Community Health, and Asthma from Particulates in the PM1/2 filter range. My theory was confirmed by a local Metereological expert considering the effects of Temperature Inversions on a Toxic Plume. (see his attached interpretation.)

In the case of Coalite, Bolsover, such circumstances and effects on a Toxic Plume were associated with ground, milk, and water pollution, and need for stringent Environmental Impact Assessments, to include Metereological Opinion, confirmed by Countess Denton in attached copy letter to local MP Denis Skinner.

So you may well ask Why CJD? This is the point answered by Norwegian Castle Cements Hazardous Standards of Cement Making as referred to in a further letter to the Rt Hon Jack Cunningham at MAFF. It also explains my implacable Opposition to Norcen Waste Oil and Solvent collection at adjacent Warndon which was obviously intended for the joint Incineration/"Fuel" role as practiced at Castle. So where does the ultimate "Health & Safety" danger lie, and as a Public Protection "Duty of Care" Why has it not been addressed by the Environment Agency and Academic Opinion, or transferred as an agreed case for Prosecution to the Health and Safety Executive under Section 3 of the 1974 Act and "Ramsgate" Case Law based on Duty of Care?

The fact is that Castle Cement exploits an apalling conversion to the Major Waste Oil and Solvent Incineration role under Agency Authorisations which take no account of required suppliers "Data Sheet" cover as under COSHH, or "Duty of Care" under "Ramsgate". Indeed as you will note from my memo to Pembroke County Council there arise serious public health concerns, as identified by Dr Dick Vansteenis over the use of toxic "Bitumen Bottom" in the power station, which as we know from Richborough, Kent, also affected farmland, crops and milk yields.

Are not serious health hazards obvious in knowing that waste oil and solvents contain arsenic and lead as all the conditions of BSE and CJD medical science would show, ie brain and immune system? Given such a fact you will note with some horror I suspect, that HMIP approved the long "back door" exploitation of contaminated cement kiln dust as supplement for animal feed and fertiliser, see extract from HMIP Circular January 1996. Indeed, Mary Horner of Heights Farm, Clitheroe, has offered every assistance to you, and has TV evidence of suppliers named transport picking up such hazardous substance. So what shares have the NFU in this trade?

With regard to the equally serious circumstances in the use of toxic waste at Pembroke Power Station, as shown in the joint memorandum to the Chairman of Pembroke County Council, the Environment Agency as the authorising body, has a case to answer, bearing in mind that whilst I was opposing the introduction of orimulsion as a health hazard prior to its authorisation, what in fact was occurring was the actual use then of Bitumen Bottoms waste for which no suppliers' data sheet could possibly be supplied, as legally required.

In this respect, despite the established and additional strain on the National Health Trust within the Pembroke area arising from the use of these fuels, that body did not respond to my original concerns, nor to Dr Dick Vansteenis detailed studies as one would have reasonably expected.

Dr Dick Vansteenis, Mary Horner and myself would be available to your Committee. Mary Horner's evidence would include detailed knowledge of Castle Cement operations with waste oil and solvents, cement kiln dust and "plume grounding" on video, and medical record of family health effects from toxic emissions and particulates! Dr Dick Vansteenis published medical studies and observations. My own as written.

13 September 1997

APPENDIX 39

Memorandum submitted by Mrs L Campion (C54)

HOUSE OF COMMONS AGRICULTURE COMMITTEE ENQUIRY INTO FOOD SAFETY AND IMPLICATIONS OF GENETICALLY ENGINEERED FOOD

Despite increasing scientific evidence emerging of the dangers of genetically engineered plants the European Commission continues to allow its own environment policies to be decided by US trade pressure.

The choice seems to be a trade war or to give way to US pressure (blackmail?) . . . and have a sick and ailing population.

The general public do not understand the implications of genetic engineering and haven't the time to study the subject in depth, so they rely on the opinions of people in authority. If told that genetic engineering is a "good thing", they will agree.

Science is playing fast and loose with these trusting people, their health and the health of future generations. WE ARE BEING BETRAYED.

We vote our MP's into government to look after our interests and to work for us . . . not to work against us.

23 October 1997

APPENDIX 40

Memorandum submitted by the Farmers' Union of Wales (C56)

INTRODUCTION

1. The Farmers' Union of Wales welcomes the Agriculture Committee's decision to undertake an inquiry into food safety issues in advance of the expected publication of the Government's White Paper on a proposed Food Standards Agency in the autumn.

2. The Union does not possess specialist scientific knowledge of, or statistical information on, food safety issues, and the following response therefore deals with the principles of the food safety debate as it affects agriculture.

THE NEED FOR A FOOD STANDARDS AGENCY

3. Many national surveys reveal that the public has lost confidence in the safety of British food. There is a perception that secrecy characterises decision-making and that inappropriate influences determine decisions on food safety to the detriment of public health and consumer interests. Recent food scares have therefore convinced the FUW that there is a need for an independent Food Standards Agency which will command the confidence of the British public.

4. Despite our wholehearted support for the principle of an independent Food Standards Agency, there is concern that the proposal to incorporate nutrition issues within the remit of the Agency will undermine the central objective of restoring public confidence in the national mechanisms for handling problems concerning food safety. The FUW believes that the Food Standards Agency should focus entirley on food safety issues since the experience of the past two years has shown the critical importance of addressing these questions with clear, independent scientific advice. The Union views food safety and nutrition as two distinct issues and is concerned that possible dispute over the nutritional qualities of various foods may serve to undermine public confidence in the agency itself. Concerns over human nutrition are already being addressed through the health of the nation initiative, and the FUW believes that work on the nutritional quality of diet should continue to be spearheaded by the Health Promotion Councils.

5. The agency needs to draw on expertise from all sectors of the food chain. The FUW would agree that Commission members should be appointed for their expertise and skill, and not as representatives of various organisations. The Union accepts that the Agency would need to give adequate weight to consumer opinion but is concerned that this representation should not be dominated by self-styled consumer groups.

6. There are parallels between the current situation with regard to food safety and the conditions which led to the creation of the Health and Safety Commission/Executive in 1974. The FUW would concur that the HSC/E provides a useful UK model for the Agency's establishment since, as with food safety in the 1990s, health and safety at work was a very high profile issue in the early 1970s. Experience of the Health and Safety Commission/Executive has shown that an adequate level of staffing and resources is essential in order to maintain an effective independent scrutiny body.

7. The FUW does not believe that the responsibilities of the recently established Meat Hygiene Service should be repatriated to local authorities. Events have demonstrated a need for consistency in inspection procedure, and the new Agency should seek to establish equitable cost structures for both Meat Hygiene Service and Milk Hygiene Scheme inspections.

8. The FUW welcomed Professor James' conclusions that the UK Commission should also include representatives from Scotland, Wales and Northern Ireland. We note that these representatives would also be members of the separate Territorial Commissions which would consider particular regional issues which were of relevance to future legislation. The FUW welcomes the report recommendation that food safety would not be a reserved power of Westminster and agrees that there should be effective regional input into the Food Standards Agency.

9. The James report recommended that the Commission assumed current Government responsibilities for drafting legislation on food safety issues. Whilst the Union acknowledges that the Food Standards Agency would have a major role to play in advising Government on future food safety legislation, democratic accountability and open discussion can only be adequately achieved through the traditional legislative process.

The Level of Food Safety Risk on Farm and in Transit

10. Genuine concern has been expressed by many farmers that the process of protecting consumers with packaging, refrigeration, inspection and legislation effectively render humans susceptible to small doses of bacteria which our ancestors would have weathered with ease. A response from one of our County Branches quoted Louis Pasteur's famous words, namely "I would rather that a child ate bread which had been dragged through the dirt than grow up on an over-sterile diet".

11. National statistics show that the risk from food poisoning is very minor, with people more likely to win the national lottery jackpot than die from food poisoning. Furthermore, in the UK, incidents of food-poisoning are rising as practices get cleaner. Since 1978, when 78 per cent of poultry in this country were infected with salmonella, strenuous efforts have been made to eradicate the organism from poultry flocks with the figure now down to only four per cent, and yet twice as many people now get food poisoning as did in 1978. Furthermore, Sweden is considered an absolute paragon of virtue in hygiene matters, with salmonella eliminated from poultry flocks, draconian hygiene legislation, everything wrapped and as sterile as possible, and yet they again continue to have a higher rate of food poisoning than that which exists in the UK.

12. There are a plethora of regulations governing the production of livestock and milk products in the UK. Agro-chemicals and veterinary products are approved by Government agencies and must be used in accordance with manufacturers' instructions. Farm assurance schemes, milk and dairy hygiene regulations, and milk purchase contracts lay down stringent guidelines on production standards. Farmers are also obliged to adhere to welfare codes and are open to prosecution if they neglect their livestock.

13. Ultimately, any irregularity or unacceptable practice in the production sector will lead to the rejection of the produce at the next stage in the food chain, and further regulation of the industry should only be considered if the new Agency identifies scientific evidence to justify such a step.

Genetically Modified Organisms

14. The FUW is concerned that the development of genetically modified organisms and their inclusion in foodstuffs are being permitted despite surveys indicating consumer opposition.

15. The Union is cognisant of the need to respect consumer resistance to the manipulation of foodstuffs since, ultimately, demand for the primary product depends on the consumer's willingness to buy.

16. The FUW has consistently advocated that food should be perceived as pure and unadulterated.

17. The Union is concerned that the labelling requirements are not such as to permit the consumer to exercise a choice as to whether or not to purchase food with GMOs since chemically identical GMOs do not have to be labelled.

18. The FUW is concerned that farmers may be unwittingly purchasing feed for livestock to which GMOs have been added, eg genetically-modified maize which does not need to be labelled because, chemically, it is identical to the conventional product.

Conclusion

The FUW recognises the need to establish an independent Food Standards Agency which will reassure consumers of the safety of British food. There is no evidence to suggest that current agricultural practices are having a detrimental effect on the safety or quality of our food, and the FUW views the development of genetically-modified organisms as a much greater threat to consumer perceptions of our food production systems.

24 October 1997

APPENDIX 41

Memorandum submitted by the British Poultry Meat Federation (C57)

SUMMARY

(a) All aspects of the poultry meat industry were examined in considerable depth by the previous Agriculture Committee in 1994, and more recently by the Advisory Committee on the Microbiological Safety of Food whose Report was published in 1996.

(b) The British poultry industry receives no CAP subsidies and survives entirely on producing what consumers want to buy. Therefore, high standards of food safety and the maintenance of consumer confidence are of vital importance to the whole industry.

(c) The vertical integration of the British poultry industry enables processing companies to exercise full control on all links in the production chain and traceability from supermarkets back to farms with full records of every flock available.

(d) High levels of investment in new housing, training and development of effective hygiene programmes have succeeded in substantially reducing bacterial infection of flocks and in lowering microbiological contamination on poultry leaving UK processing plants.

(e) The main foodborne bacteria in poultry associated with human food poisonings are salmonellas and campylobacters. Both groups are widespread in the environment and in other animals, wild birds and rodents. In poultry they are rarely accompanied by clinical disease and the birds become asymptomatic carriers.

(g) Static trends in human salmonella infections, measured by faecal isolates per 100,000 of population, indicate that the salmonellas most associated with poultry meat are not contributing to the continuing rise in human food poisoning cases.

(h) There is a declining trend in reported general outbreaks and numbers of persons taken ill where poultry meat is suspected as the vehicle responsible. In those cases where the particular food vehicle responsible (or suspected) for the outbreak has been identified, poultry meat appears to be the least frequent cause.

(i) Total reported incidents of all salmonellas in live poultry have been below the levels in cattle for the last three years. Salmonella typhimurium incidents reported in poultry have been below the levels in cattle and pigs for the last four years.

(j) There is no formal monitoring of livestock for campylobacter in the UK and no trend data exists for livestock, poultry or other potential sources of human infection. Individual studies suggest that the level of infection in poultry flocks is high compared with salmonella. However, hygiene control programmes for salmonella reduction are likely to also act positively on prevention of campylobacter infections.

(k) Poultry, like other farm animals, pets and humans, become ill from time to time with bacterial infections. It is imperative from a welfare point of view that sick birds are treated to avoid suffering. Only authorised antibiotic medication supplied or prescribed by a veterinarian can be used to treat flocks.

(l) CVL figures for antibiotic sensitivity show that, with the exception from time to time of certain phage types of S. typhimurium originating mainly from calves, there has been no significant change in the resistance pattern of salmonella isolates from UK poultry.

(m) Unfortunately there is no database for campylobacter but studies overseas suggest increasing resistance to quinolone in campylobacters of poultry origin. However, some of these studies need to be evaluated against the lax controls on antibiotic licensing and usage in the countries concerned.

(n) The UK poultry industry only uses authorised antibacterials but recognises that informed scientific knowledge may require that usage of previously acceptable antibiotics be modified or even discontinued.

(o) Problems of cross-contamination in processing plants are the subject of ongoing research and equipment modification.

(p) The poultry meat hygiene Directive allows only potable water to be used in processing with the result that the process treatments considered to make a valuable contribution to improving food safety, are currently not permitted. Such treatments are officially approved and used in other major poultry meat producing countries outside the EU.

(q) Various surveys confirm that salmonella contamination of poultry meat has continued to fall over several years and is now thought to average 15 per cent across the industry. Surveys indicate generally higher levels of contamination in samples from butcher shops compared with supermarkets, suggesting poor temperature control or possible cross-contamination beyond the processing plant.

(r) A re-orientation of hygiene legislation is needed away from the highly prescriptive, inflexible and inappropriate rules embodied in the poultry meat hygiene Directive, to a full HACCP approach developed and implemented by companies.

(s) Gaps in scientific understanding appear to exist on campylobacter, other vehicles for human food poisonings, the microbiological status of alternative rearing systems, novel vaccine development, the place where human infections are acquired, the practicability of the so-called Swedish Model, and on why preparing and eating poultry in the home actually reduces the risk of food poisoning from salmonella and campylobacter.

INTRODUCTION

1. This study by the Select Committee on Agriculture is a timely one which will usefully extend examination of food safety beyond those products and practices which have so recently been the subject of such close scrutiny. The microbiological safety of all food categories was extensively covered most recently by the Committee of the Microbiological Safety on Food, headed by Sir Mark Richmond, in its two Reports Part 1 (1990) and Part 11 (1991). Since then several detailed studies have been undertaken on particular food poisoning outbreaks and their underlying causes, on particular food borne bacteria and other infectious agents, and on individual food producing sectors.

2. All aspects of the poultry meat industry were examined in considerable depth by the Select Committee of Agriculture in 1994 and, more recently, by the Advisory Committee on Microbiological Safety of Food whose Report was published in 1996. This Report considered food safety risk at each stage in the poultrymeat food chain and covered all the aspects listed in the Select Committee's terms of reference for its present study, with the exception of the implications of genetically modified organisms.

3. The information and evidence in the 1996 ACSMF Report is detailed and largely still current. It describes the different stages of the farming process, feed production, slaughtering, processing and the industrial, catering and domestic sectors. The British Poultry Meat Federation (BPMF) commends this Report to the Committee for a detailed description of poultrymeat industry practices relevant to food safety and microbiological risk.

4. The following BPMF submission draws on and where necessary updates the ACSMF Report as it relates to poultry producers and processors but does not attempt to repeat the full description of the industry contained in it.

THE UK POULTRY INDUSTRY

5. The BPMF is a voluntary trade association representing all sectors of the British poultry meat industry from primary breeding, hatching, rearing, slaughter and processing and further processing. Over 750 million birds are slaughtered annually in the UK producing over 1.4 million tonnes of poultry meat. BPMF Members account for around 95 per cent of total UK production. The poultry industry receives no price or direct income support or any other production subsidies under the CAP or national UK schemes. It relies entirely on producing and selling what consumers want for its survival. Clearly high standards of food safety and the maintenance of consumer confidence are of vital importance.

6. The UK poultry industry is characterised by the very high degree of vertical integration where relatively few large companies own and operate all elements in the farming and processing chain, including in many cases compound feed milling. Some independent breeding, rearing and hatching operations exist, but these breeding and rearing activities are subject to strict contracts with the integrated processing companies.

7. Vertical integration enables processing companies to exercise full control of all aspects of farming and production including strict bird health and welfare controls, hygiene programmes, feed standards, and transport, as well as the slaughter, processing and product development. Unique to the poultry meat sector is the statutory requirement that every flock going to slaughter must have a Production Report from the farm providing the MHS inspectors in slaughterhouses with full details of the flock, including any health issues and veterinary medicines administered. Every farm must be under the supervision of a veterinarian who must make a declaration to this effect to the Official Veterinary Surgeon (OVS) at the slaughterhouse. Vertical integration allows product traceability from the supermarket back to a particular farm with full records of every flock available.

8. The British poultry industry takes very seriously its role as a major provider of safe, wholesome and nutritious food. The industry is mindful of the recommendations of the ACSMF Report and invests in new high quality housing and equipment and biosecurity on farm; in breeding research for ongoing improvements in bird health, welfare and productivity including disease resistance; in processing standards, and in staff training in all aspects of live bird management and food hygiene. The industry conducts research of its own in various areas and participates in work funded by Government and other bodies. This investment and the industry's disciplined approach throughout the production chain has succeeded in substantially reducing bacterial infection of flocks and lowering microbiological contamination on poultry meat leaving British processing plants. The industry is committed to continuous improvements to ensure British poultry meat remains the first and safest choice of consumers.

FOODBORNE INFECTIONS

9. There are many infectious agents and a wide range of vehicles for human foodborne illnesses. In poultry the most common bacteria with human health implications are salmonellas and campylobacters.

Salmonella

10. Salmonellas are able to grow in the presence and absence of oxygen and grow best over a temperature range of about 10°C–50°C. They grow rapidly in food at room temperature, will survive refrigeration and freezing but are readily killed by heat over 70°C. Salmonellas are widely distributed in man, animals, birds and pets, where they occur in the intestinal contents, and may survive in their environments for many months. Apart from a few specifically human serotypes, there are some 2,200 different salmonella serotypes which infect animals and birds and many of them may cause salmonellosis in humans at varying dose levels. In the UK S. enteritidis is commonly associated with poultry, S. typhimurium is associated with poultry but more commonly with cattle and pigs. Both can be further sub-divided into phage types. In poultry, apart from a small number of host adapted species which cause disease mainly in young birds, salmonella infection is rarely accompanied by clinical disease and the birds become asymptomatic carriers.

11. Food animals become infected with salmonellas by direct contact with clinically ill or symptomless animals, by the consumption of contaminated feed or water, or from the environment including contaminated pasture and buildings, wild birds and rodents.

12. Transmission to man is thought to be usually foodborne from infected food animals. It often arises from cross-contamination of food to be eaten without further cooking, by raw food previously contaminated by the intestinal contents of infected livestock. If the contaminated food has been stored with inadequate refrigeration or at room temperature the organism multiplies producing an infective dose at the time of consumption, unless it is cooked, in which case the organism is destroyed. Contamination of food by an infected food handler is also possible but considered unusual. Person to person spread other than via food occurs and is particularly common in hospitals and institutions such as psychiatric hospitals, maternity homes, children's' homes and old peoples' homes.

13. Environmental contamination may lead to persisting outbreaks, eg contamination of poorly maintained refrigerators and kitchen equipment, organisms in dust and cleaning equipment such as mops and vacuum cleaners and in hospital ward sluices and toilet facilities have been shown to be the cause of continuing outbreaks over many months and years.[3]

Campylobacter

14. The other main bacteria commonly associated with poultry and poultry meat are campylobacters. There are over 13 recognised species of campylobacter. The two species most common in man, C. jejuni and C. coli, will not grow below a temperature of 28°C and grow best between 42°C and 43°C. Unlike most foodborne organisms therefore, they do not normally grow in food. They are sensitive to drying and tend to reduce in numbers during refrigeration or freezing, but may nevertheless persist in frozen meat for several months. Pasteurisation and chlorination readily destroy them.

15. Campylobacters are widely distributed in nature, both in animals and man, and as free-living forms in the environment. C. jejuni and C. coli may also survive for long periods in water in the environment. In cattle and sheep campylobacter infections are caused by C. fetus. C. coli is found in pigs and piglets. In many animals, particularly young animals including calves, puppies, kittens, and poultry, C jejuni may give rise to diarrhoea but infection is more often symptomless. Sub-clinical infection or colonisation of the intestines with C. jejuni is common in poultry flocks.

16. Animals and poultry become infected with campylobacters by direct contact with the environment and then with each other. Transmission to man is by food, and drink (milk and water), and by direct contact with infected animals, especially puppies and kittens. Person-to-person spread does occur, but rarely, in families.

TRENDS IN HUMAN INFECTIONS

17. Total clinically diagnosed cases of food poisoning formally notified and ascertained by other means for England and Wales has increased from 14,253 notifications in 1982 to 83,664 (provisional) notifications in 1996[4]. Increases have also occurred in Scotland and Northern Ireland. Figure 1 shows the rate of food poisoning notifications in England and Wales per 100,000 of population.

18. For Salmonella the current trend in faecal isolates per 100,000 of population in England and Wales for all salmonella types has been static since 1989. See Figure 2. S. enteritidis and S. enteritidis PT4 recorded declines from 1992 but rose slightly last year. Nevertheless, Figure 2 shows S. enteritidis PT4 isolates currently running at the same level as 1986–87.

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[3] "The Microbiological Safety of Food" Richmond Report Part 1, p 117.

[4] Source OPCS (Hansard 27 February 1998, p 308).

19. S. typhimurium isolates in humans have remained relatively static over the last 15 years, if anything recording a slight long-term downward trend between 1981 and 1996.

20. While part of the large increase in human food poisoning notifications is probably due to improved reporting, there undoubtedly has been a significant growth in the incidence of food poisoning in the human population over recent years. It may be concluded from the trends, however, that enteritidis and S typhimurium, the salmonellas most associated with poultry and poultry meat, are not contributing to the continuing rise in human food poisoning cases.

21. Campylobacter enteritis in man, although only recognised in 1977, is the commonest gastro-intestinal pathogen isolated from humans in the UK but after a long increasing trend to 1993, the rate in the last three years has been falling. Figure 3 show faecal isolates of campylobacter per 100,000 of population in England and Wales from 1981 to September 1997.

Trends in Outbreaks of Foodborne Illness Associated with Poultry Meat

22. Figures 4 and 5 show the total number of reported general outbreaks and numbers of persons taken ill due to food poisoning in the United Kingdom for 1987–1996[5], where poultry was the reported food vehicle or among the food vehicles suspected. A general outbreak is a food poisoning incident involving members of more than one household and involving two or more cases. The figures show a gradual decline over the last 10 year period for salmonella and for all aetiological agents, where poultry meat was the suspect vehicle.

23. The low levels for campylobacter reflects the fact that the great majority of campylobacter food poisoning incidents are sporadic and not general outbreaks. In considering these figures it should be noted that the PHLS-CDSC introduced a more detailed reporting system in 1992 in England and Wales which might account for some of the higher figures in that year. From 1992 onwards, however, the figures include outbreaks where other food vehicles will have been implicated in addition to poultry meat.

24. The ACSMF Report noted that the trend in foodborne illness in the UK is similar to that of other European countries. Analysis of FAO/WHO data for 1990–91 shows that for 9,026 outbreaks of foodborne disease reported, some 70 per cent (6,356) involved salmonella spp. Of 7,707 outbreaks involving foods, poultry meat accounted for only 3.6 per cent, eggs and egg products 11.5 per cent, mayonnaise/creams 11.6 per cent, meat and meat products 22 per cent, mixed or other foods 22 per cent and unknown food vehicles 29 per cent.

25. In the USA 2,397 foodborne disease outbreaks reported between 1983 and 1987 included 600 outbreaks attributed to bacteria. In only 33 (5.5 per cent) of these was poultry meat considered the vehicle of transmission.[6]

26. It is clear that in many outbreaks of food poisoning several, diverse food vehicles are suspected and it is not possible to identify the particular food responsible.

Notwithstanding this, the trends indicate that poultry meat as a vehicle responsible or suspected in general food poisoning outbreaks is reducing. Further, in those cases where the food vehicle responsible (or suspected) for the outbreak has been identified, poultry meat appears to be the least frequent cause.

Breeding and Rearing

27. This submission only covers poultry meat production. Almost all chickens and the great majority of turkeys in the UK are reared indoors in large environmentally controlled houses, on litter of chopped straw or wood shavings. There are many stages during production at which microbiological contamination can occur necessitating high standards of construction and strict hygiene control procedures. Figure 6 shows the typical broiler production cycle. The cycle is broadly similar for other commercial species except that the ages are, of course, different.

UK Statutory Controls

28. Government controls for salmonella in breeding flocks and hatcheries date from 1989. In 1993, UK controls on salmonella were harmonised with the Council Directive 92/117/EEC through the Poultry Breeding Flocks and Hatcheries Order 1993. Breeding flocks comprising 250 or more chickens and hatcheries with capacity of 1,000 or more eggs must register with the Agricultural Departments. Owners of breeding flocks are required to take samples every week in the case of primary breeding flocks and fortnightly for parent breeding flocks, with official testing every four weeks for primary flocks and eight weeks for parent flocks.

29. For flocks whose eggs are hatched in a hatchery with an incubator capacity of over 1,000 eggs, the samples examined during the laying period are composite samples of chick meconium or cull chicks hatched from eggs supplied to each hatchery by the breeding flock. Samples must be examined for salmonella using methods prescribed in the Directive.

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[5] Figures for 1995 and 1996 exclude Northern Ireland

[6] Report on Poultry Meat, ACSMF, 1996 paragraphs 3.32 and 3.33

30. If either S. enteritidis or S. typhimurium is isolated from any chicken in a house, the Directive requires all birds in the house to be slaughtered on site or under supervision in a designated slaughterhouse. Unincubated eggs produced by the birds must be destroyed. The house concerned must be thoroughly cleared and disinfected and environmental samples taken by MAFF officers must be negative for salmonella before restocking can take place.

31. In addition to the statutory programme, a number of commercial companies have operated voluntary testing schemes including other poultry species.

32. The Directive provides for alternatives to bacteriological testing and compulsory slaughter for breeding flocks such as serological testing and antibiotic treatment. Alternative programmes must be approved by the Standing Veterinary Committee and to date we understand that none have, although we do not know the reasons for this. The Directive is based largely on the monitoring and control procedures which had been in place in Great Britain since 1989. Some Member State authorities have national approval for alternative programmes.

33. Many other Member States did not have slaughter policies and have not implemented the Directive, possibly because of the cost of compensation for slaughtered birds which would have to be met and because of the impact on the industry in their country. The Directive is now being revised to find acceptable alternatives to slaughter which are able to be implemented by all Member States. In a single market for poultry meat it is necessary to ensure that the monitoring and treatment requirements for zoonotic diseases are applied equally in all countries. Clearly this is not the case at present.

SALMONELLA IN POULTRY FLOCKS REDUCING

34. Primary breeding flocks in the UK are consistently free of salmonella infection, and infection of parent breeding flocks is low and declining. The reported incidents of S. enteritidis and S. typhimurium isolations in broiler chicken parent breeding flocks are shown in Figure 7. The figures show a dramatic reduction since 1992.

35. Figure 8 shows incidents of salmonella reported in chicken flocks including broiler chickens, over the last 10 years. While incidents of serotypes other than S. enteritidis and S. typhimurium have generally been declining since 1989, some increase occurred last year. Figures for S. enteritidis, however, shows the steeply falling trend since 1990 has now levelled off. S. typhimurium incidents in chicken have remained at relatively low levels over the last 10 years.

36. Figure 9 gives the incidents of salmonella infections in turkey for the same period. Unlike chicken, reported incidents of S. enteritidis and S. typhimurium have remained at very low levels throughout the 10 years.

37. Figure 10 shows the reported incidents of salmonella for the four major farmed livestock species from 1993 to 1996. The figures show the declining trend in S. enteritidis in poultry and that total salmonella (all serotypes) in poultry have been below the level in cattle for the last three years. S. typhimurium incidents reported in cattle and pigs have been above those in poultry for the past four years, according to the Veterinary Laboratory Agency.

CODES OF PRACTICE FOR SALMONELLA PREVENTION AND CONTROL

38. Indications are that the incidence of S. enteritidis and S. typhimurium in poultry flocks is declining over the long term with the greater understanding of the routes and transmission of infection and the development of effective programmes to prevent and control these bacteria in poultry. In this regard the industry has worked with MAFF to develop various MAFF Codes of Practice for the prevention and control of salmonella in breeder flocks and hatcheries, commercial laying flocks, broiler chickens, turkey, and feed and feed ingredients. A further Code of Practice for the prevention of rodent infestations in poultry flocks for the control of salmonella has recently been issued. It is thought that these hygiene controls to combat salmonella infection will also help against the introduction of campylobacter into poultry flocks.

39. The basic premise of the Codes is the evidence that infection in poultry flocks is by horizontal transmission, ie from contaminated environment or feed and not via vertical transmission from laying hen to chick. Thus the aim is to prevent the initial introduction of salmonella into flocks, to protect the microbiological status of the flock and to ensure that any organisms are eliminated from the environment and equipment after the birds have been removed from the house for slaughter.

CAMPYLOBACTER IN POULTRY FLOCKS

40. There is no formal monitoring of livestock for campylobacter in the UK and no trend data exists for livestock, poultry, or other potential sources of human infection. Individual studies, however, suggest that the level of infection in poultry flocks is relatively high compared with salmonella.

41. Following the ACSMF Report on Poultry Meat, the poultry industry has been participating in a major study by the Central Veterinary Laboratory (part of the VLA). The initial longitudinal study of 100 flocks

investigated the risk factors for campylobacter infection of broiler chicken flocks. The results indicate that the most important preventative or control factors are effective hygiene barriers such as housing birds in buildings in a good state of repair, appropriate usage of disinfectant boot dips and a high standard of cleansing and disinfection of drinking water equipment. It was noted that most of the farms had effective vermin control programmes.

42. It is most likely that campylobacter infection is introduced sporadically to chicks from the external environment, perhaps by poultry farm workers or by wildlife vectors. This first part of the study concludes, therefore, that measures aimed at improving hygiene barriers are likely to reduce the incidence of campylobacter infection. Trials to develop effective measures are in progress as the next stage of this work.

43. In its 1996 Report on Poultry Meat, the ACSMF noted the importance of the design, construction and maintenance of feedmils, poultry houses and hatcheries. Site hygiene and the hygiene of staff and visitors was emphasised. This attention to hygiene controls must include in particular the thorough cleaning and disinfecting of every house after each flock has been removed and before new day-old-chicks are placed in the house. All modules used for transporting birds as well as the lorries themselves are cleaned. The industy agrees with the importance of hygiene control programmes and proper training of staff. The approach highlighted by the ACSMF reflects the high standards and strict programmes already in place in many poultry companies in the UK—in feedmills, on breeding farms, in hatcheries, on rearing farms, and in live bird transport, and this was acknowledged by the ACSMF in its Report.

Planning Constraints

44. In seeking to raise all UK poultry production to these standards the investment costs involved in a climate of tight margins were also acknowledged by the ACSMF. This constraint remains today. Besides this however, there is another increasingly serious constraint being placed on the industry. Companies are encountering difficulties replacing old poultry houses with new buildings which meet stringent quality and hygiene controls necessary for prevention of bacteriological infection because planning applications for new houses are being declined.

45. There is evidence that the planning process and residents' legitimate right to object in some areas is being hijacked by single issue groups with no connection with the local area concerned. Rejection of planning applications on certain grounds can be misguided because modern houses and equipment can improve not only the microbiological status of birds from a food safety point of view but also their health and welfare. In our view, these are sound reasons for local authorities to encourage new poultry house applications rather than to reject them.

Antibiotics

46. Poultry, like other farm animals, pets and humans, become ill from time to time with bacterial infections. These occur irrespective of the size of the flock, whether the birds are on range or in open houses, or on larger farms in closed or conventional housing. However the nature and type of illness may vary depending on the husbandry system. It is imperative from a welfare point of view that sick birds are treated if suffering is to be avoided.

47. Like human medicines, all animal medicinal products require an official Marketing Authorisation (licence) in terms of European Union and UK legislation before they can be used. The Marketing Authorisation is granted only when research data collected over many years, covering quality, effectiveness and safety to animals, people and the environment, is approved by independent UK and European scientific and technical experts. The Authorisation sets out the species to which the product can be administered. The maximum dosage and the minimal withdrawal periods prior to processing are also specified.

48. Oral medication is the only practical method of treatment of poultry in the great majority of cases. Herding and picking up individual birds to medicate them when illness is present is stressful and will often exacerbate the problem. A requirement for oral medication is that the birds must be fit enough not only to reach feed and water but to eat and drink if they are to receive the medication. This necessitates prompt action at the onset of infection if health and welfare are to be safeguarded.

49. There are three broad categories of antibiotic usage in poultry in the UK.

50. Therapeutic—These are applied when birds in a flock are either ill and/or dying as a result of a bacterial infection. Where time allows it is standard practice to identify the bacteria involved and carry out an antibiotic sensitivity test on them, before treating the entire flock with the appropriate antibiotic. In these circumstances only authorised antibiotics supplied or prescribed by a veterinarian can be used.

51. Prophylactic—This approach to medication is only used in very specific circumstances usually when disease monitoring within the industry suggests that there may be a risk of an infection passing from the breeding hen via the egg to the chicken. Depending on the type of infection the disease may manifest itself at day-old or some later age which can usually be accurately predicted. Rather than wait for the birds to become clinically ill and unable to eat or drink naturally, they are medicated via the feed or water at the time the infection is predicted to occur. This has the advantage of reducing the amount of antibiotic needed to ensure

effective treatment. Only authorised antibiotics supplied or prescribed by a veterinarian can be used for prophylactic treatment.

52. Digestion enhancers—Digestion enhancers are types of antibiotic reserved only for animal use which enable the bird to digest its feed better. They are wrongly referred to as "growth promoters". They are added to feed in minute doses, typically five to ten parts per million. Digestion enhancers must have a Marketing Authorisation and can only be given under conditions laid down in the Authorisation. These very low dose antibiotics prevent certain bacteria attacking the gut lining in the early stages of the birds' life. Such damage can reduce the effectiveness of the birds' digestive system, resulting in wet faeces or diarrhoea and slower growth. Digestion enhancers are not appetite stimulants. They are not absorbed through the gut wall into the birds' blood stream, but pass through the system without leaving antibiotic residues in the meat.

53. Digestion enhancers benefit animal health and welfare, and have environmental and human health advantages. They reduce the risk of enteritis in the birds, and lower the water content of the faeces which improves litter condition and reduces the risk of foot and skin problems which arise from wet litter. Necrotic enteritis occurs in all types of poultry whether kept for meat or eggs, whether in houses or on free range. The only birds that do not suffer from this condition are those kept in cages and in consequence are separated from their faeces.

54. From an environment point of view, digestion enhancers reduce the amount of faecal matter produced through better utilisation of the feed, and lower the water content of litter, facilitating disposal. More and more poultry litter now goes to generate electricity in specially constructed litter burning power stations.

55. Human health also benefits from cleaner birds being presented at the slaughterhouse due to the drier rearing environment, from the reduced overall use of antibacterials in particular those antibacterials which are also used in human medicine and those closely related to them. When Sweden banned digestion enhancers in poultry, the usage of prescription antibiotics increased substantially overnight. Since then the total volume has been declining. However, the irony is that prescription antibiotics are more related to antibiotics used in human medicine, whereas those digestion enhancers that are banned are not.

56. The World Medical Association Inc Statement on Resistance to Antimicrobial Drugs issued in October 1996 makes nine recommendations, only one of which relates to antibiotic use in animals as follows "National medical associations in collaboration with veterinary authorities should encourage their governments to restrict the use of antimicrobial agents as feed additives for animals strictly to those which are not used for humans." This condition is the basis for approval of digestion enhancers in the UK and EU legislation.

Potential risk from resistant bacteria

57. In the case of poultry the two most relevant agents are salmonella and campylobacter. People can become infected by contact with live poultry, and carcasses, and through improperly prepared contaminated poultry meat.

58. From an animal health point of view it is not necessary to treat poultry for campylobacter as it does not cause clinical disease. Similarly in most cases slamonella does not cause clinical disease in poultry. But poultry in which either salmonella or campylobacter is present may be treated with antibiotics for some other infection. It is the repsonsibility of the industry to ensure that such treatment does not add significantly to the number of resistant salmonellas or campylobacters.

59. For many years, CVL has established the antibiotic sensitivity status of all salmonella isolates received for serotyping, and because there is a statutory requirement to report all isolates from poultry, this provides an excellent database. It is clear from CVL figures that, with the exception from time to time of certain phage types of S. typhimurium, originating mainly from calves, there has been no significant change in the resistance pattern of salmonella isolates from poultry in the UK.

60. The commonest serotype in poultry for the past 10 years has been S. enteritidis PT4. It is one of the few serotypes that, under certain circumstances, can cause clinical disease in poultry. It would therefore be likely to have had greater exposure to antibiotics than any other serotype. Nevertheless, CVL data indicates that there has been no significant increase in antibiotic resistance, including quinolone resistance, of S. enteritidis over the past decade and that the percentage of resistant organisms continues to be minimal.

61. Unfortunately there is no similar database for campylobacter. Dutch and Spanish researchers have produced some evidence that there has been an increase in resistance to quinolone in campylobacters of poultry origin. This information has to be evaluated in the light of the absence of controls on antibiotic usage in those countries in the past. In Spain there is widespread uncontrolled usage of legal and pirated quinolones. In the Netherlands there was no official authorisation required for antibacterials used in animals until recently, and a wide range of quinolones, many of which would not rceive approval under current legislation, were used during the period covered by the Dutch study.

62. While the UK poultry industry only uses authorised antibacterials, it recognises that improved scientific knowledge may require that use of previously acceptable antibiotics be modified or even

discontinued. Any review of antibacterials must be on the basis of sound science and include a full risk benefit analysis. The so-called precautionary principle should be invoked only in the light of such a review and not for reasons of political expediency.

Slaughter and Processing

63. Slaughter and processing must conform to the requirements of the Council Directive on health problems affecting trade in fresh poultry meat (71/118/EEC) as amended and updated by Directive 92/116/EEC. The welfare of birds at time of slaughter is covered by a separate Council Directive 93/119/EEC. The poultry meat hygiene Directive lays down hygiene rules applicable to EU production, and includes provisions on imports from Third Countries into the EU. The Directive does not apply to cutting and storage of fresh poultry meat in shops or in premises adjacent to sales points, where the cutting and storage are performed solely for the purpose of supplying the consumer directly. The Directive is implemented in the UK by The Poultry Meat, Farmed Game Bird Meat and Rabbit Meat (Hygiene and Inspection) Regulations 1995 (SI 1995 No. 540).

64. The main elements in poultry processing are shown in the flow diagram in Figure 11.

65. Feed is withdrawn from the birds on farms prior to loading for transport to slaughter in order to reduce crop and intestinal tract contents to help reduce the level of possible contamination of the carcass, from that source. Poultry processing plants have automated washing systems and lorry washing bays. Crates and modules are washed as soon as the birds have been removed, with the aim of having thoroughly cleansed containers arrive at the next farm to reduce the possibility of cross-infection between flocks.

66. In the killing process birds are usually hung close together on shackles and are in contact with each other and necessarily with the machinery at each stage, with implications for cross-contamination during the process. Cross-contamination can occur particularly in the scalding and plucking process and during evisceration. Various approaches to reduce this in the scalder are being tried but with varying degrees of success, eg counter flow scalders, multi-stage scalding in separate tanks and scald tank additives.

67. Plucking machines are areas of high potential cross-contamination because bacteria can lodge in minute cracks in the rubber plucking fingers. Water sprays used to carry away the feathers removed from the bird form aerosols under the rapidly rotating plucking heads, carrying any contamination to carcasses in front and behind. Research work is ongoing on the design of plucking fingers to prevent bacterial adherence and on ways of preventing aerosols.

68. Evisceration is mostly mechanical although some manual evisceration is undertaken in small premises often for seasonal trade in minor poultry species. The visceras are required to be inspected for particular diseases which, if present, mean rejection of the carcass. Until recently, the viscera was withdrawn and left attached to the carcass for inspection by the Official Veterinary Surgeon (OVS) or the Poultry Meat Inspectors employed by the Meat Hygiene Service. However, the statutory requirement that the viscera remains attached to the carcass until inspection increased the potential for contamination from leakage from damaged intestines hanging in contact with the carcass. This practice was criticised by the ACMSF Committee.

69. Since the ACMSF Report, eviscerating equipment has been redesigned to extract the viscera and separate it completely from the carcass by placing it in a “spoon” or holding it separately in a clip, moving in unison with its carcass. However, it was some time before this hygiene advantage was permitted to be introduced. The poultry meat hygiene Directive is highly prescriptive and strictly speaking does not allow the viscera to be separated from its carcass despite the clear food safety benefit of the new technology.

70. Following evisceration, the carcass is spray washed inside and outside which reduces any contamination which may have occurred, and then chilled to 4°C or less as quickly as possible. Poultry intended for sale as fresh is generally air chilled by continuous cold air blowers or in batches in a chill room. Carcasses intended for freezing are usually chilled in counterflow immersion chillers.

71. Immersion water chilling has been viewed in some quarters as a source of carcass cross-contamination. However, this is not the case with counter-flow immersion chilling systems in which carcasses move through the tank against the flow of clean water ensuring that clean carcasses exit the tank where the water is cleanest. Counter flow immersion chilling of poultry is expressly permitted in the EU and detailed flow rates and other parameters are set out in the poultry meat hygiene Directive.

Carcass Rinses

72. The ACSMF noted that hypochlorite or chlorine dioxide added to immersion chillers would have little effect on the bacterial burdern on carcasses, but that chlorinating water would minimise any cross-contamination. However, the Directive allows only potable water to be used in all stages of poultry processing, with the result that valuable treatments using chemicals such as chlorine, chlorine dioxide, lactic acid, trisodium phosphate, and any other process treatments, chemical or otherwise, are currently not permitted. Such treatments are officially approved and used in other major poultry meat producing countries outside the EU.

73. The ACSMF considered that such chemical rinses may have a valuable contribution to make to improving food safety. Some have reservations about their use, concerned that they could lessen companies' commitment to maintain good hygiene in the processing stages. These concerns are unfounded in the sense that these treatments can reduce bacterial loading but not eliminate it, and heavily contaminated carcasses will remain contaminated. Treatments can never be a substitute for good hygiene practice but can be a valuable tool in contributing to reduced bacterial loading on the carcass and reduced cross-contamination of carcasses. Chemical rinses are far more effective than water alone and their use would also significantly reduce the amount of water required in processing.

SALMONELLA ON POULTRY MEAT

74. A 1994 study commissioned by the Steering Group on the Microbiological Safety of Food (SGMSF) conducted by the PHLS examined chickens from supermarkets, freezer centres and butchers shops. Of 562 chickens tested from four sample sites per chicken, 37 per cent were contaminated with salmonella species and 16 per cent with S. enteriditis PT4. S. enteriditis, isolated from 22 per cent of the chicken in the sample was the most frequent serotype. Frozen chicken were more contaminated than chilled, 41 per cent compared with 33 per cent.

75. However, further breakdown of the data suggests that the level of contamination in frozen chicken may be due to the common practice at that time of including giblet packs inside the carcass cavity of frozen birds, but not with fresh whole birds. This appears to be borne out by the results for frozen chicken with no giblets in which only three (13 per cent) of the 23 birds in this category had salmonella contamination, a lower proportion than that for chilled whole chickens without giblets. This seems to indicate that the spin chilling process used to produce frozen chicken gives microbiological results at least as good as results from air chilled systems.

76. Compared with results from previous PHLS surveys, the prevalence of salmonella contamination in both frozen and chilled chicken meat showed a decrease on 1990 and 1987 figures. Of 101 samples of UK frozen raw chicken examined in 1987, 64 per cent had salmonella spp present. In 1994 some 41 per cent of 281 frozen samples were salmonella positive.

77. For chilled raw chicken, of the 103 samples in 1987, 54 per cent were salmonella positive whereas by 1994 this had reduced to 33 per cent of a larger sample of 281 raw chicken.

78. An EC funded survey on behalf of national consumers' associations, also published in 1994[7] looked at the prevalence of salmonella and campylobacter on retail chicken in EU Member States and in Norway and Slovenia. Across Europe 1,707 samples were examined with the overall prevalence of salmonella spp presence being 21 per cent (EU average 24 per cent). The results for the 160 chicken items tested in the UK for salmonella recorded a salmonella presence in 36 per cent of the sample, with those taken from butcher shops prone to higher levels of contamination than supermarket sourced items.

79. Total plate counts (representing the total number of living germs active at room temperature, and a general indicator of hygiene, freshness and quality) were taken for all samples. The survey Report commented that many of the total plate counts in the UK sample were low, especially for frozen chicken, indicating good temperature control at the point of packing and rapid freezing. Fresh chickens tended to have higher total plate counts, "perhaps reflecting storage or transportation at temperatures above 8°C when most bacteria are able to multiply". Only one of the results showed a total plate count higher than 10^8, which, the Report says, shows overall that good food standards were obtained.

80. A more recent survey undertaken in the UK by the Consumers' Association published in October 1996 sampled 160 fresh and frozen chicken items purchased from supermarkets and butcher shops. Salmonella was present in 20 per cent of the sample, a substantial reduction on 36 per cent recorded in a similar CA study carried out in 1994. The published results do not specify the types of salmonella found nor the levels of contamination.

81. While the BPMF does not have, at present, full information on the results of individual company salmonella testing programmes, anecdotal evidence from companies confirms the falling trend of salmonella presence in poultry meat indicated in the independent studies outlined above. Rates of salmonella presence in finished product leaving the processing plants are estimated to be around 15 per cent, with companies, however, regularly achieving rates between 10 to 15 per cent. Some major UK integrators are consistently below 10 per cent.

CAMPYLOBACTER ON POULTRY MEAT

82. Various surveys in several countries over recent years confirm that raw poultry meat is frequently contaminated with campobylacter. The 1994 EC survey involving consumers associations also looked at the prevalence of campylobacter on retail chicken. Across Europe the overall prevalence of a campylobacter

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[7] Parallel Food Testing in the EU. Part I Main Report Chicken: prepared by International Consumer Research and Testing Ltd, September 1994.

presence was 28 per cent, ranging from 0 per cent in Greece and 1 per cent in Norway to 53 per cent in France and 60 per cent in Portugal.

83. In the UK the overall prevalence of campylobacter in this study was 44 per cent for UK-produced chicken. The analysis of the UK results showed that the highest number of campylobacter contaminated items were in that part of the sample which came from butcher shops, at 83 per cent compared with 36 per cent for the items purchased from supermarkets. In the latter the meat is wrapped and packed in the processing plant. This suggests that significant cross-contamination may have occurred at a point in the food chain beyond the poultry meat processing plant.

FORWARD PROGRAMME FOR THE POULTRY MEAT PROCESSING INDUSTRY

84. In September this year the Report of the Government/Industry Working Group on Meat Hygiene was published. This puts forward a Hazard Analysis and Critical Control Point (HACCP) framework for poultry slaughterhouses, hygiene training targets and planned course development to help meet them, and refers to salmonella testing and the importance of hygiene measures to control salmonella and campylobacter infections.

85. The BPMF has long advocated HACCP in poultry meat production and processing. The present Directive on poultry meat hygiene is highly prescriptive in the construction and all aspects of operations of establishments and in the inspection procedures. Inspection, by MHS Poultry Meat Inspectors under the supervision of the Official Veterinary Surgeon (OVS) requires every carcass and their viscera to be visually inspected, but microbiological contamination cannot be detected by these methods. Most integrated poultry companies in the UK are using HACCP and quality assurance programmes which make the visual inspection of the carcasses by the MHS of questionable relevance.

86. In our view, a re-orientation of hygiene legislation is needed, away from the highly prescriptive, inflexible and inappropriate rules, to a full HACCP approach to be developed and implemented by the company. This would put responsibility for food safety squarely on the producer and not on the enforcement agency. The latter's role should be to assist companies, particularly smaller plants, to draw up a HACCP plan, and to audit companies' operation of their own HACCP systems. Food hygiene legislation should concentrate more on the objectives and not stipulate precisely how all companies should meet them. We understand that this approach is being implemented successfully in Australia, New Zealand, and USA.

GAPS IN CURRENT SCIENTIFIC UNDERSTANDING

Campylobacter

87. The 1996 ACSMF Report on Poultry Meat expressed concern at the limited data on campylobacter and recognised that the industry had difficulty in implementing control of campylobacter because control measures are not fully developed. There is a need for greater knowledge of the origins and means of transmission of campylobacter to poultry and other animals. (To this end, as has been noted above, the industry is participating in a study of risk factors associated with campylobacter infection in broiler chicken flocks.) Similarly more understanding of the routes of infection in man and their relative importance is required.

Other vehicles for Salmonella

88. Salmonella statistics are readily available for the poultry sector due largely to the statutory and non-statutory monitoring requirements which have existed for poultry species since 1989. Salmonella figures for other farm animals may be less comprehensive because they are based on notifications made as a result of diagnostic examinations. Given the wide range of vehicles of infection, we consider that studies of salmonellas present in foods other than poultry meat are required and of their potential role in foodborne illnesses. This gap applies even more so to campylobacter where the possible routes of infection may be more numerous than for salmonella.

Status of Alternative Rearing Systems

89. For poultry, virtually all existing data relate to flocks reared indoors in conventional environmentally controlled housing. Interest is increasing in free-range and organic farming systems, including for livestock and poultry, and many claims are made about the welfare of the animals and the quality and safety of the food. Given that salmonella and campylobacter infection are known to be horizontally transmitted to poultry flocks from a wide range of sources in the environment, and that poultry infected with salmonella and

campylobacter are mostly symptomless, we consider that properly set up studies of these alternative farming systems are required to ascertain the microbiological status of flocks and the food deriving from them. At present the number of free range flocks is very limited. Any wholesale move from indoor rearing to free range production would have serious implications for bacteriological and disease control which would have to be considered.

Vaccines

90. While it is possible to eradicate and control salmonella infections in poultry flocks through stringent hygiene procedures consistently applied, the cost of total eradication which inevitably involves the slaughter and disposal of any infected flocks, is very high. The long-term effectiveness of applying such stringent controls to ensure poultry meat is totally free of bacteria is highly questionable when these bacteria are so widespread in animals, household pets, in other foods and in the environment in general. In our view the development of cost effective vaccines again the most common salmonella types in livestock and poultry should be given high priority. Vaccines against campylobacter need to be developed.

Place of Infection

91. Greater understanding of the source of human infection is needed for both salmonella and campylobacter, if the rate of infection is going to be effectively reduced. In this context the place of infection could be more accurately assessed. Figures from the Office of National Statistics show around 8 per cent of food poisoning in England and Wales from 1985 to 1995 were presumed to have been contracted abroad. Over the same period the percentage presumed contracted at home, ie within England and Wales declined from 74 per cent to 62 per cent, and the percentage of "not known" rose from 17 per cent to 31 per cent. This indicates that possibly almost four in every ten of food poisonings cases in England and Wales may have been contracted abroad.

Swedish Model

92. In Sweden, where stringent on-farm procedures and a domestic market effectively closed to imports have succeeded over the last decade in reducing salmonella in poultry meat to very low levels (currently claimed to be less than 5 per cent for salmonella although campylobacter levels remain considerably higher), the level of human food poisonings from salmonella remain similar to the UK on a per capita basis. The Swedish authorities put this down to infection acquired abroad which accounts for around 70 per cent of all cases. The smaller proportion of domestically-acquired salmonella is, the Swedes say, decreasing as a result of the measures in place for all farm animals for the last decade. The success and the cost-effectiveness of the Swedish Model in meeting the objective of substantially reducing food poisoning in the Swedish population needs careful assessment. The difficulties of trying to impose the Swedish Model in the context of a far larger poultry industry in a generally warmer climate, escalating "foreign" travel, and borders open to world trade would require careful consideration by any regulatory body.

Eating Poultry Meat Reduces Risk of Food Poisoning

93. A phenomenon noted by the ACSMF in its 1996 Report merits further investigation. Studies show that handling and preparation of chicken in the home may not always be a risk factor for campylobacteriosis as for salmonellosis. A PHLS national case-control study undertaken in England and Wales between May 1990 and January 1991[8] found that handling of whole chicken in the domestic kitchen, or consuming meals prepared from this type of chicken, were significantly associated with a decreased risk of campylobacteriosis. Evidence of a protective effect from consuming chicken meat was also found in a 1989 national case-control study of S. enteritidis PT4 infections[9].

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[8] Adak GK, Cowden JM, Nicholas S, Evans HS. The Public Health Laboratory Service national case-control study of primary indigenous sporadic cases of campylobacter infection. Epidem Infect 1995, 115(i):15–22.

[9] Cowden JM, Lynch, D, Joseph CA, Mahony MO, Mawer SL, Rowe B et al. Case control study of infections with Salmonella enteritidis phage type 4 in England. Brit Med J, 1989, 299(6702):771–773.

Figure 1

Food poisoning notifications in England and Wales in 1980-1995

1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
21	20	20	26	28	39	46	59	77	102	101	102	123	133	159	156

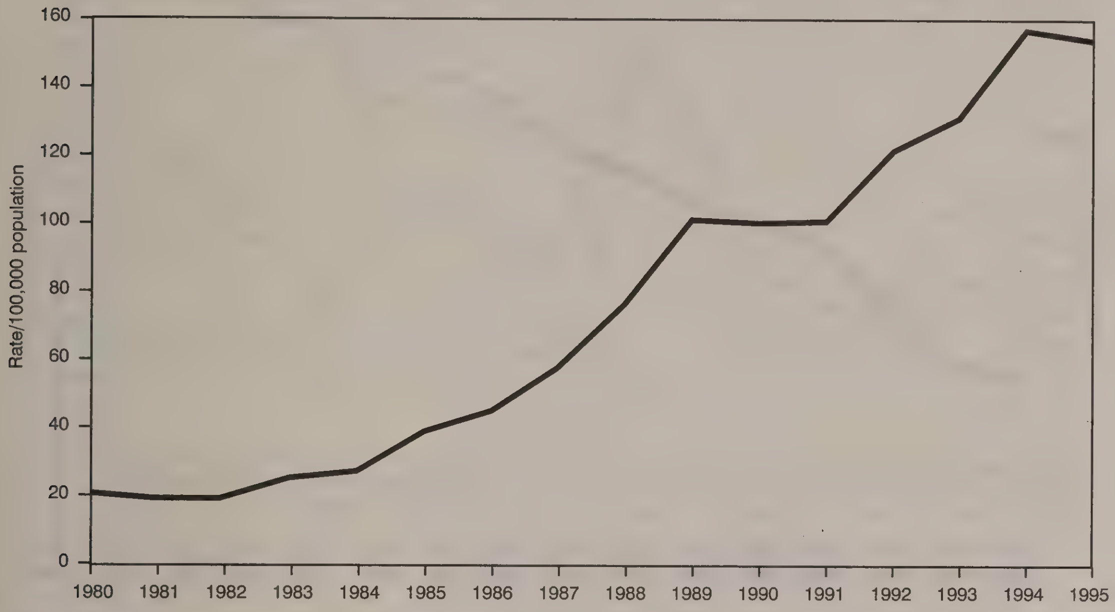


Figure 2

Laboratory reports of faecal isolates in England and Wales 1981-1996

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
All Salmonellas	21	25	30	30	27	34	41	54	59	59	54	61	60	60	57	56
S. typhimurium	8	12	16	15	11	14	15	13	14	11	10	11	9	11	13	11
S. enteritidis	2	2	4	4	6	10	14	31	31	37	34	39	39	34	31	35
S. enteritidis PT4	1	1	2	3	4	6	10	25	26	29	29	33	34	27	24	26

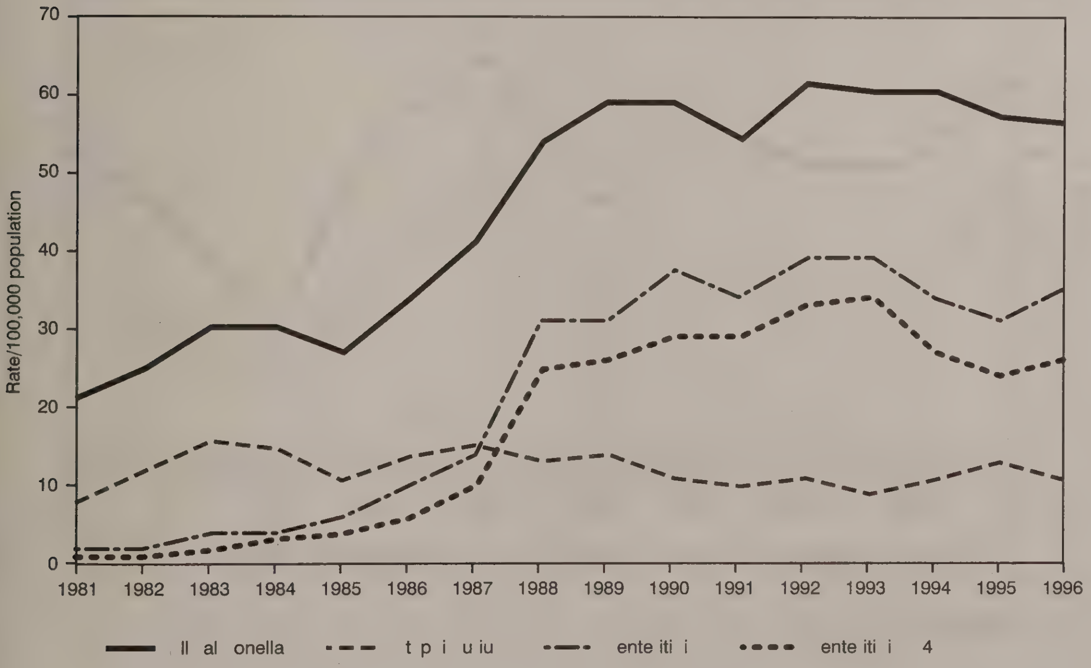


Figure 3

Campylobacter: **Laboratory reports of faecal isolates in humans in England & Wales in 1981-1997**

1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
24	26	34	43	47	49	54	57	64	68	64	75	77	86	85	84

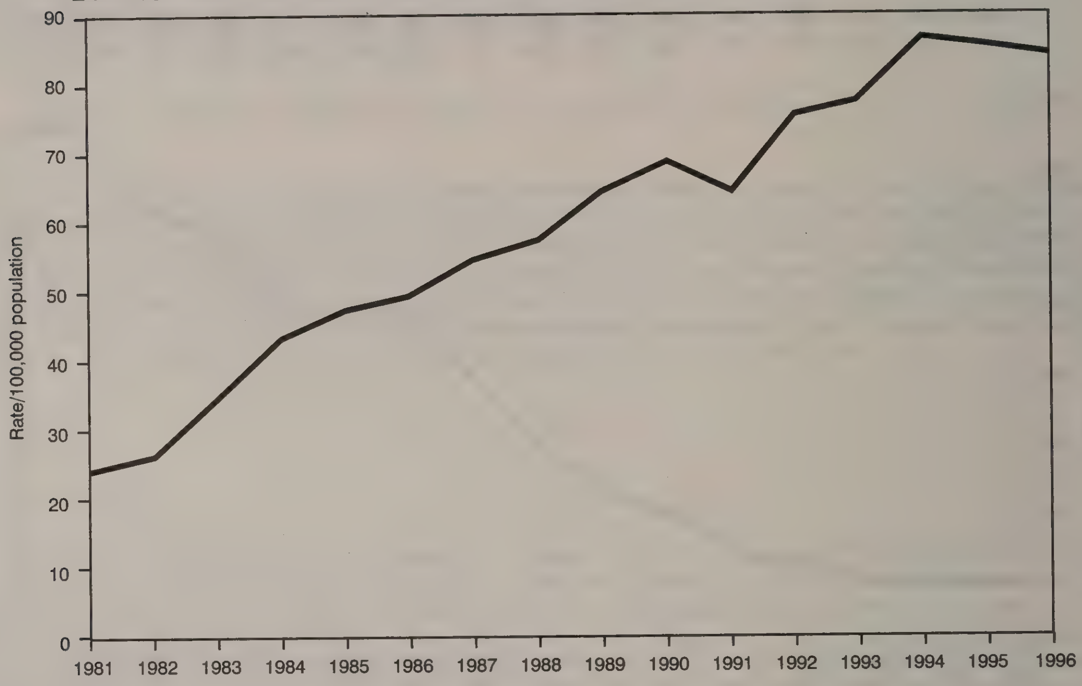
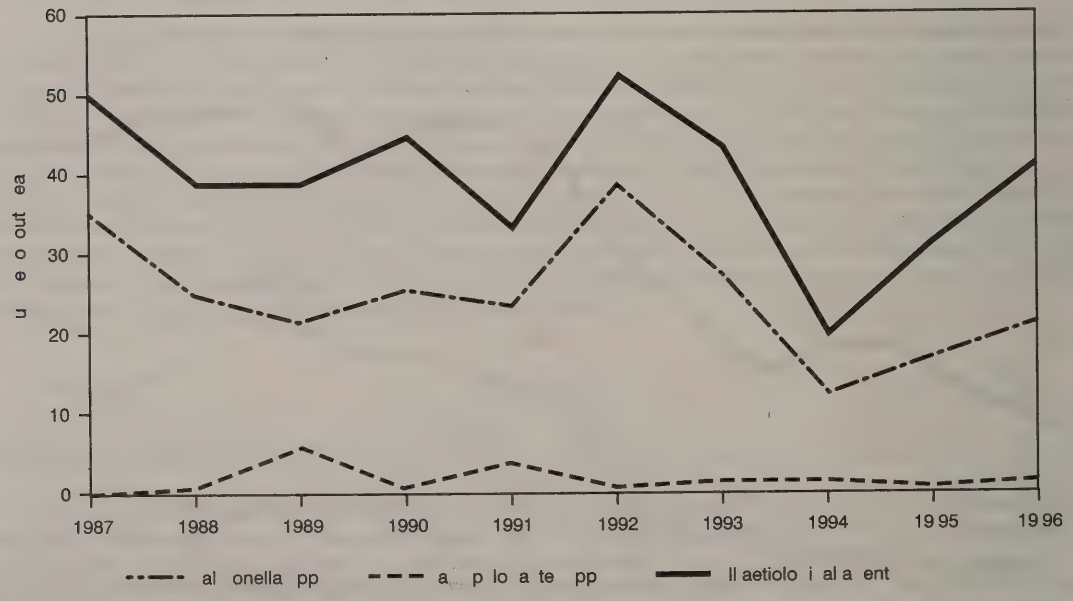


Figure 4

Number of reported food poisoning general outbreaks in the UK 1987-1994 where poultry meat was a suspect food vehicle

Aetiological Agent	1987	1988	1989	1990	1991	1992	1993	1994	*1995	*1996
Salmonella spp.	35	25	22	26	24	39	28	13	18	22
Campylobacter spp.	0	1	6	1	4	1	2	2	1	2
All aetiological agents	50	39	39	45	34	53	44	21	32	42

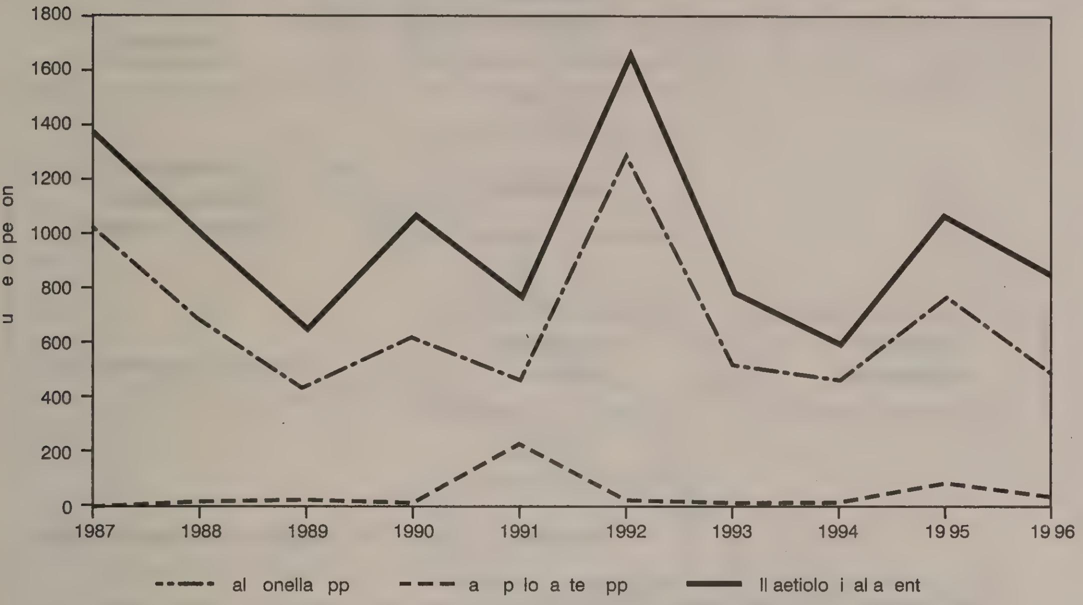


Figures for 1995 and 1996 do not include Northern Ireland

Figure 5

Number of persons taken ill associated with the general outbreaks in 1987-1994 in the UK

Aetiological Agent	1987	1988	1989	1990	1991	1992	1993	1994	*1995	*1996
Salmonella spp.	1014	691	433	624	460	1278	516	464	767	497
Campylobacter spp.	0	6	27	4	227	21	8	9	89	41
All aetiological agents	1380	1003	640	1056	770	1647	797	597	1069	855



*Figures for 1995 and 1996 do not include Northern Ireland

Figure 6

Typical broiler production cycle

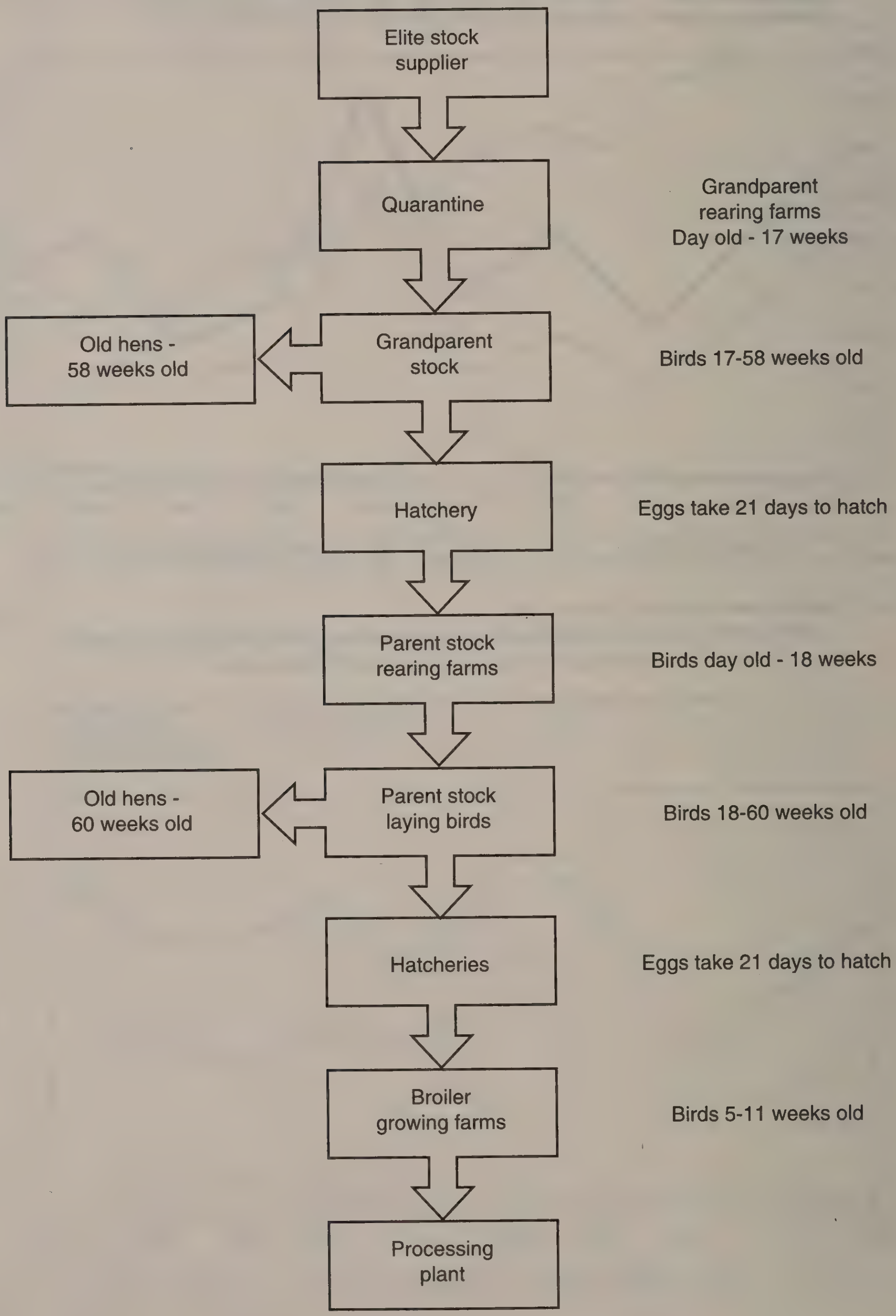


Figure 7

Reported Salmonella incidents in broiler breeders (Great Britain)

	Sep-89	Dec-89	Mar-90	Jun-90	Sep-90	Dec-90	Mar-91	Jun-91	Sep-91	Dec-91	Mar-92
S. enteritidis	60	80	130	145	179	215	265	275	260	255	220
S. typhimurium	12	15	18	20	20	25	24	23	23	45	42

	Jun-92	Sep-92	Dec-92	Mar-93	Jun-93	Sep-93	Dec-93	Mar-94	Jun-94	Sep-94	Dec-94
S. enteritidis	230	245	245	215	170	150	135	130	85	65	50
S. typhimurium	41	39	11	11	8	10	9	7	5	4	2

	Mar-95	Jun-95	Sep-95	Dec-95	Mar-96	Jun-96	Sep-96	Dec-96	Mar-97	Jun-97	Sep-97
S. enteritidis	14	36	4	12	14	16	11	4	10	16	
S. typhimurium	3	4	4	5	3	2	2	2	0	3	

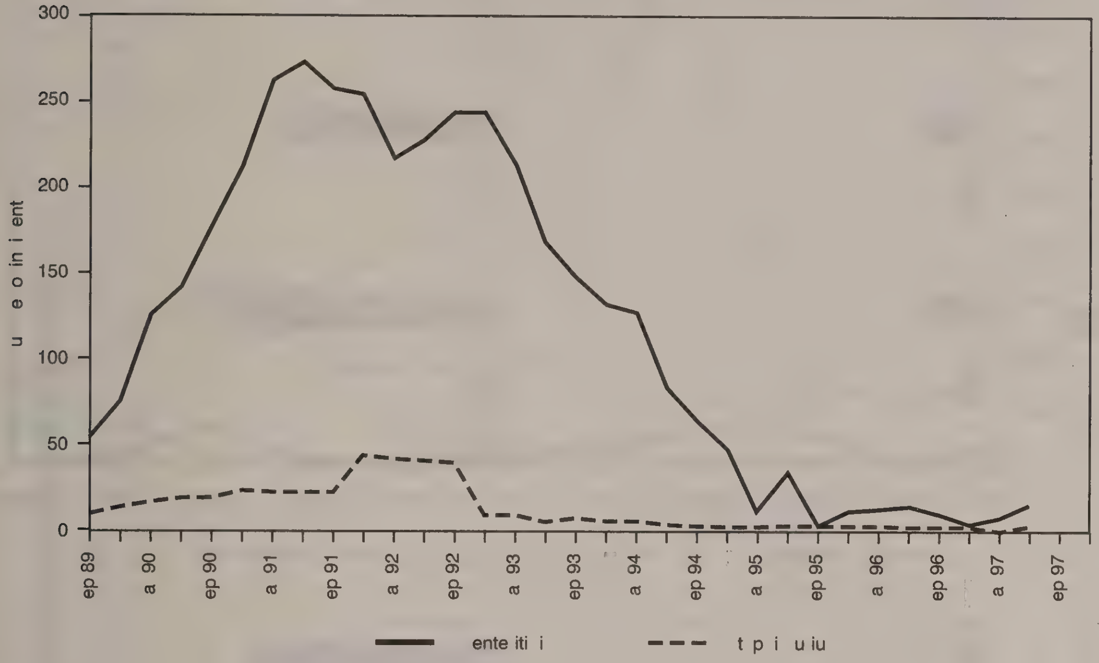


Figure 8

Incidents of Salmonella in chickens

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
S. enteritidis	36	111	401	738	843	816	683	580	250	178	174
S. typhimurium	135	92	78	131	107	112	103	31	36	75	82
Other serotypes	363	294	359	661	956	875	661	610	552	564	662

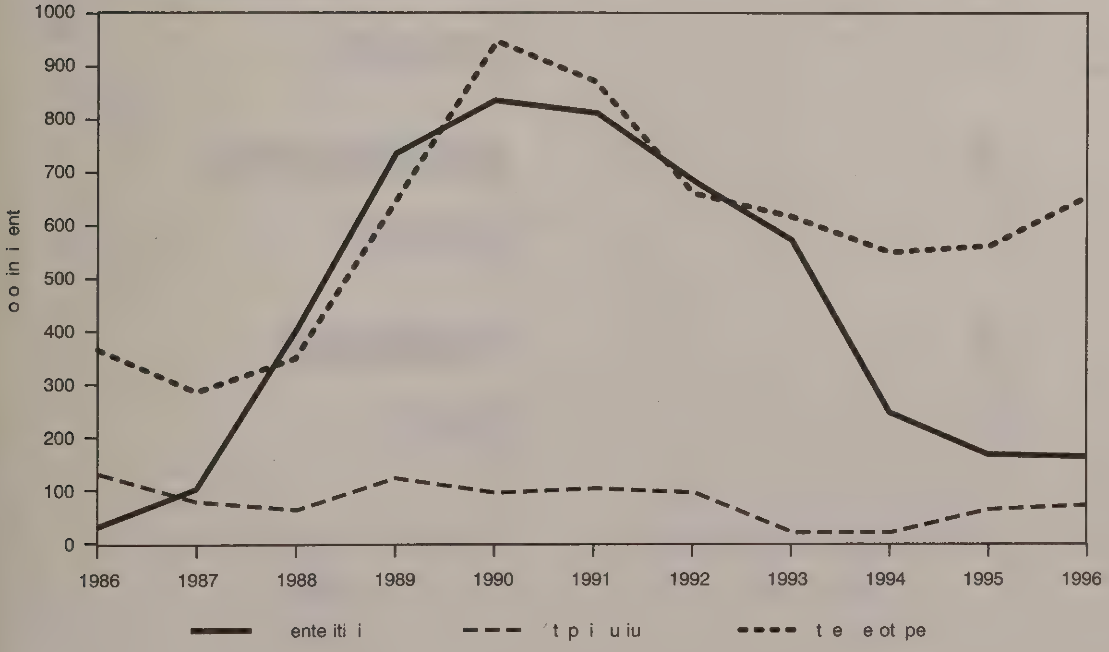


Figure 9

Incidents of Salmonella in turkeys

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
S. enteritidis	29	3	48	68	26	10	14	1	68	16	1
S. typhimurium	11	10	4	7	18	29	13	9	12	83	68
Other serotypes	200	95	160	753	948	670	414	321	342	216	162

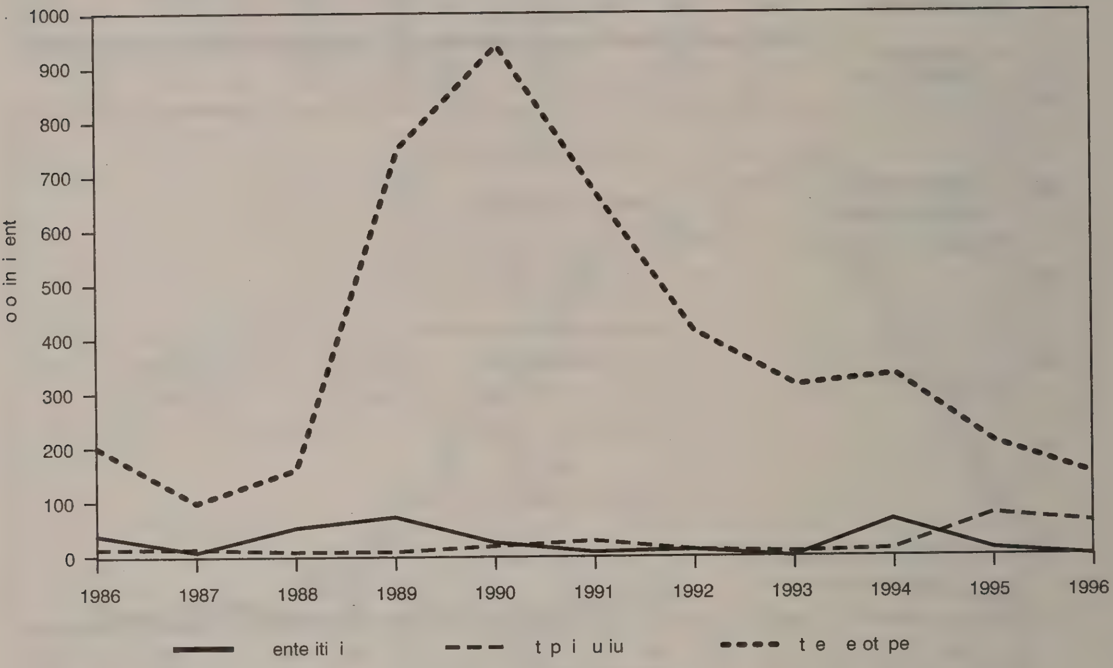
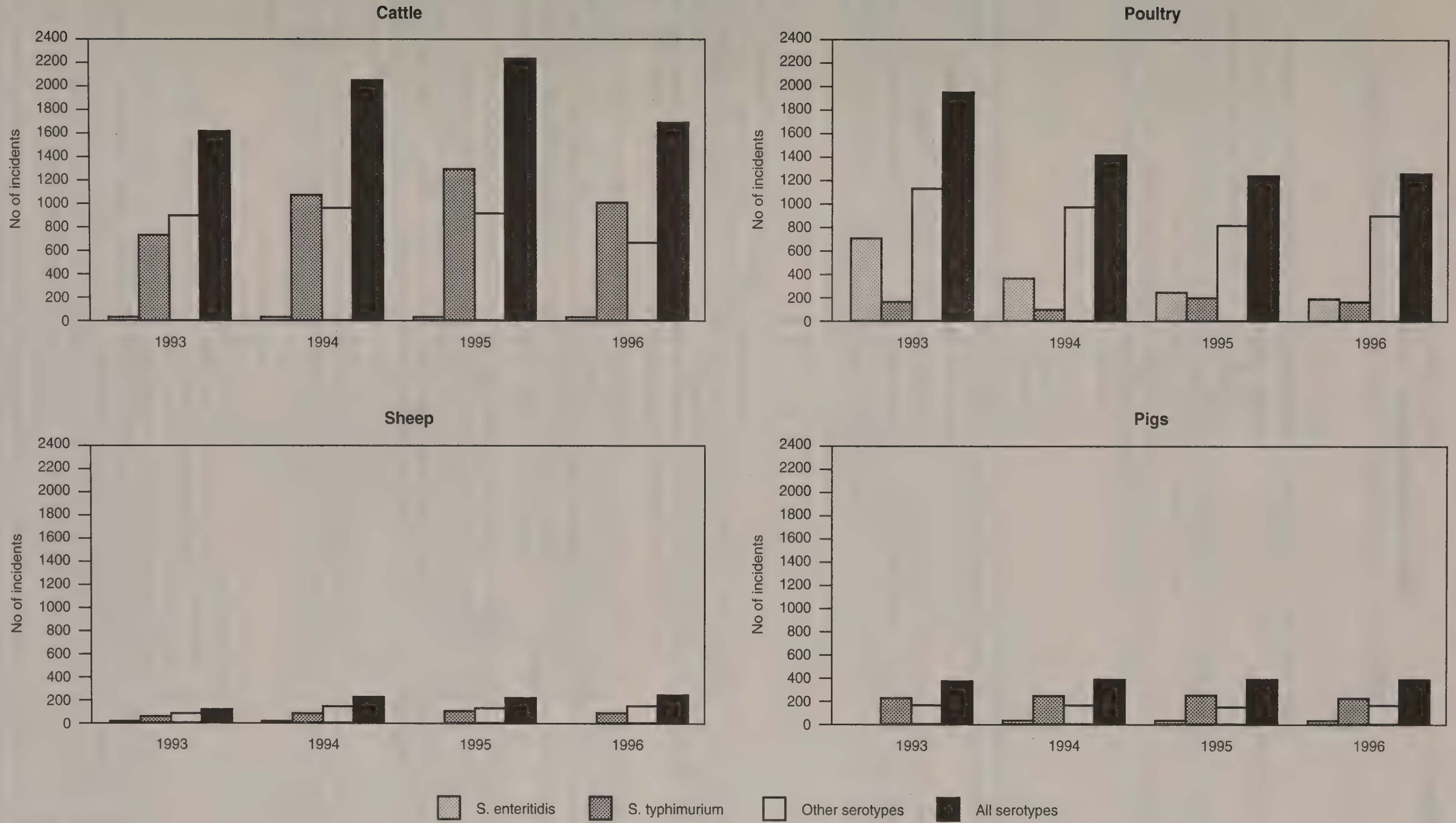


Figure 10

Incidents of Salmonella in farm animals reported in the UK



Cattle

Poultry

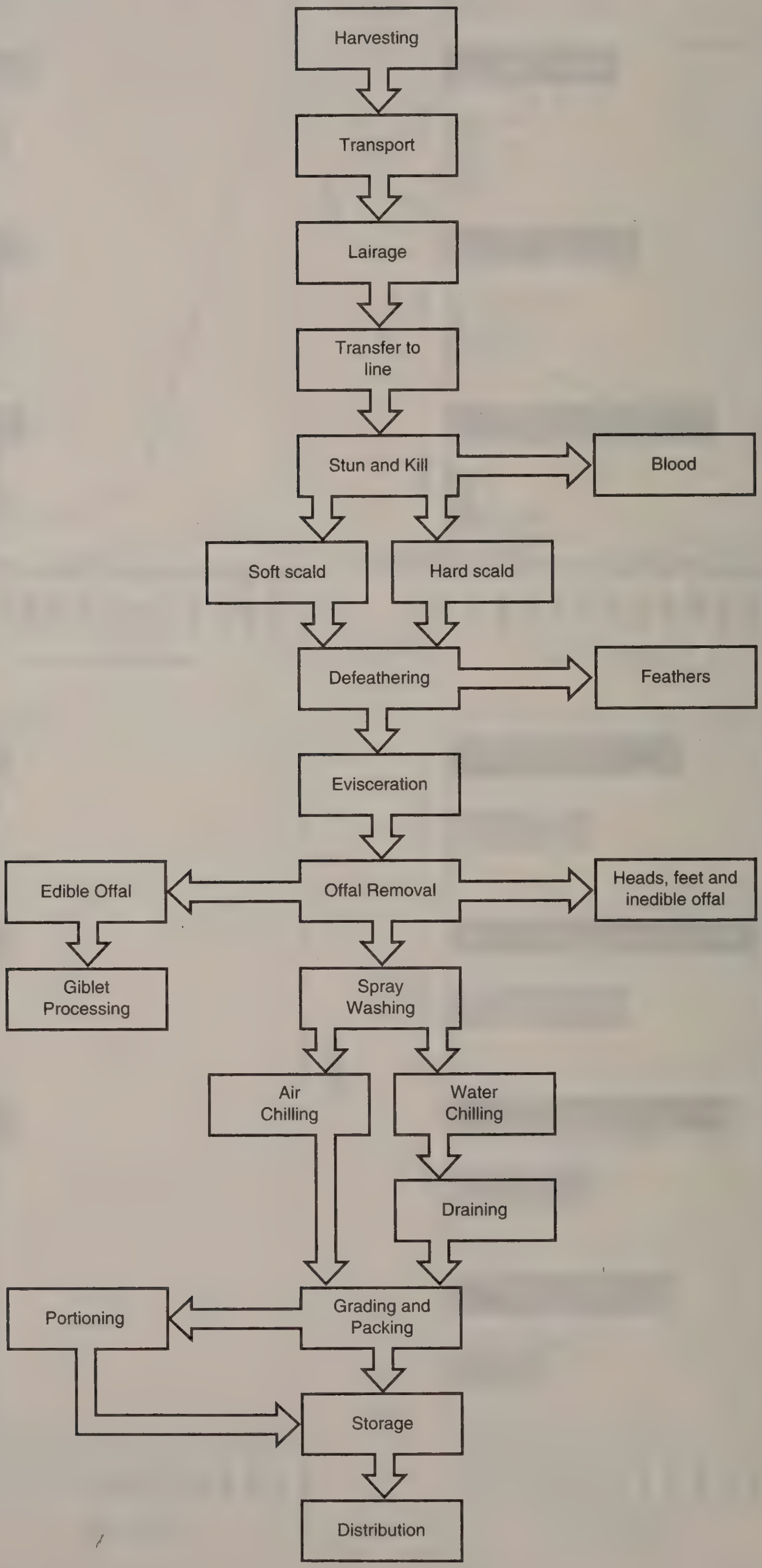
Sheep

Pigs

Source: VLA, MAFF

Figure 11

Main steps in the primary processing of poultry



APPENDIX 42

Memorandum submitted by the National Farmers' Union of Scotland (C59)

SUMMARY

- The comprehensive approach to food safety in the James Report has been welcomed.
- The Union's support for a Food Standards Agency is based on the need for independent advice to the public on food safety.
- Farming's use of genetically modified organisms (GMOs) may be restricted by consumer acceptability even after any safety considerations have been satisfied.
- In the event of a political decision which denies farmers the use of GMO technology available elsewhere, compensation for cost disadvantage should be provided.

INTRODUCTION

1. The Union has commented in similar terms to the request by the Cabinet Office for comments on the James Report. Professor James' report was welcomed as a contribution to debate about how the machinery of government should be organised—so that consumers get independent advice on food safety.

2. Support, in principle, for creation of an independent food safety body was given by the Union at an early stage of the public debate. This identified farming with the case for reorganising the food safety system so as to gain public confidence in it. The new body was seen as a vehicle for getting advice to consumers which is based on the best scientific information available at the time.

THE PLACE OF AGRICULTURE IN FOOD SAFETY

3. The subtleties of responsibilities for safety at different points of the food chain are likely to be unknown to most people. Most consumers cannot be expected to draw any distinction between "raw food", "packaged food" and "processed food". But farmers are easily recognised as the primary producer—at the start of the food chain. Therefore agriculture's interest in food safety goes beyond the farm gate.

4. Consumers cannot be expected to define the responsibilities of different people at the different stages of producing "food". But there can be many stages of handling and processing between farms and final consumption. And final consumption is a potential point of food contamination—at home or in a catering facility. Failure of any part of the supply chain reflects badly on the safety status of food. Therefore, the comprehensive approach to food safety in the James Report is welcome.

5. The role of the National Farmers' Union of Scotland in food safety as such, cannot be analytical or prescriptive. Technical and scientific expertise lies elsewhere. Rather, in representing the interests of farmers, it is necessary to ensure that such expertise is brought to bear on food matters. And it would be expected that the Union should play a part in communicating the information generated. Professor Pennington's report acknowledged the Union's actions in communicating the clean livestock message. Since then there has been further collaboration with the Meat Hygiene service on that topic.

6. It is expected that representative organisations concerned with other stages of the food chain would have a similar position. But some of these will have relevant technical expertise within their sector. Farming is advised by expertise outwith the sector. And farm practices are highly regulated, based on expert advice to Government.

EUROPEAN UNION AND INTERNATIONAL TRADE

7. Food safety matters are also being examined in other countries and at a European level. As yet, there is only partial harmonisation of safety standards. However, a Green Paper has been published by the European Commission—"The General Principles of Food Law in the European Union". The Commission says that the majority of food legislation has been harmonised. However, the free-movement-of-goods aspect of the Single Market obliges mutual recognition of each member state's standards by the others.

8. The James Report suggested that establishing the Agency should enable the UK to play a major role in food safety matters in Europe. The Union understands the constitutional position whereby the external trade interest in these issues are negotiated by the EU. Both in that respect, and for the achievement of fair trade within the EU, it is important that all countries construct their joint and individual food safety measures on the common basis of best scientific evidence available.

GENETICALLY MODIFIED ORGANISMS

9. Whether farmers would be well advised to exploit this technology depends critically on consumer perceptions—and on the judgement of these perceptions exercised by intermediates in the food chain. If appreciable resistance can be expected at the end of the food chain, or at any intermediate stage between field and table, farmers should be told.

And because of potential use of GM crops in animal feedstuffs, their potential use is relevant to the whole of agriculture.

10. The Union's general position on genetically modified organisms (GMOs) is that their introduction to farming practice should only follow from assessment that they do not pose any known or anticipated safety hazards for individuals and for the natural environment. But there is also a need to establish consumer acceptance.

11. Because of the need to be sensitive to the issue of consumer acceptance of GMOs, they should be clearly marked as such. Likewise, novel foods which incorporate GMOs should also be clearly labelled.

However, the Union recognises that incorporation of GMOs in other foodstuffs may become so prevalent that it becomes impractical to identify GMO content. Or the "may contain GMOs" label could be so widespread as to lose consumer attention.

12. To be consistent with this approach, farmers should be fully aware of any genetically modified material brought onto their farms. Seeds, for example, should be clearly labelled.

13. The on-farm production of GMOs should be strictly regulated everywhere. And the Union has supported the role of the proposed new Food Standards Agency in this regard.

There is a possibility of GMO technology being applied in some countries and not in others. Were this to happen, the cost competitiveness of farms would be uneven. So the question must be posed of how to ensure that non-GMO farms are not driven out of business by the legitimate political choice of denying access to such technology.

Within the restriction of consumer acceptability as well as safety, farmers should not be commercially disadvantaged by denial of GMO technology that is available to others—who supply the EU market.

14. It is accepted that ethical restrictions on agricutural technology may be imposed through the normal political process. Whenever that happens, farmers should be compensated for the commercial consequences of such competitive disadvantage.

17 October 1997

APPENDIX 43

Memorandum submitted by the Centre for Applied Microbiology and Research (C60)

FOOD SAFETY AND THE PROPOSED FOOD STANDARDS AGENCY (FSA)

The proposed Food Standards Agency will provide a broad and coherent framework for the monitoring, identification and implementation of all aspects of Food Safety. We welcome this initiative, and for the opportunity to contribute to the debate on the activities of this Agency.

The past two decades have seen a marked increase in the rate of foodborne illness reported in the UK and elsewhere; this has been mirrored by an increasing public awareness of Food Safety issues. Changes in the way in which different foods are produced, processed, distributed, stored, cooked, eaten and disposed of have all been variously attributed, accurately or inaccurately, with a significant role in this increasing problem of food-borne disease. Foods are increasingly sourced from outside of the UK and may be subject to processing methods that differ from those used in the UK. Changing tastes in food, coupled with perceived or misconceived risks of "adulteration" with chemical preservatives have led to preferences for more "natural" foods, some of which have well recognised risks to health through food-borne infection and intoxication. We welcome the major role identified for the proposed Food Standards Agency in addressing these issues in relation to improved education in Food Safety issues, and for improving risk communication to the public.

DH/MAFF advisory panels have reviewed practices and commissioned research in the general field of Food Safety and we would suggest that these be extended to encompass all activities that impact on food production (from "Farm to Fork"). The FSA could usefully consider wider issues of interest to consumers, such as functional foods and the relationship between diet and disease.

The provision of safe food to the consumer—or as safe as is practicable—relies upon the exclusion or elimination of pathogens from that food during all stages from production to consumption. Long established practices to achieve food that is safe for consumption need to be reassessed regularly to confirm that they meet consumer needs in a changing world. Food hygiene can be compromised or obviated by inadequacies in monitoring, processing, storage, and use by the consumer. An important function of the Food Standards Agency will be to introduce programmes for monitoring existing practices and to identify new risks through changes in practices, and thus help to maintain public confidence in industry practices and government initiatives.

The practice of farm and human waste disposal by land-fill and spreading on agricultural land is widely perceived as a significant mechanism by which crops become contaminated and infection of farm animals is perpetuated. Run-off from farmland is a significant source of pathogens entering natural waters later used for irrigation and the water supply. The survival of potential human pathogenic micro-organisms on crops and grazing land needs to be reviewed in the light of changing understanding of the persistence of such micro-organism in the natual environment, and particularly with the advent of newly recognised ("emergent") pathogens such as the verocytotoxin-producing *Escherichia coli* (VTEC) serogroup O157. Safe and contained laboratory-scale systems can be used to model the persistence of such pathogens, and to predict the effect of control systems. Such model systems can be used to study persistence of pathogens in waters, on surfaces and in complex natural environments such as soil and composts. Similarly, safe cleaning and disinfection procedures should be determined in model systems where the influence of conditions such as those commonly encountered on the farm, in the food processing industry, in retail premises and in the home can be assessed, eg with pathogens and spoilage flora surface bound and/or protected by food matrix materials such as proteins and fats.

The spread of micro-organisms from domestic and farm animals to man through the food chain requires continued investigation. For example, VTEC present no threat to the health of cattle, sheep and goats, and are probably normal components of the intestinal bacterial flora of these farm animals; however, VTEC such as *E coli* O157 presents a very considerable health risk to humans. The control of the dissemination of animal waste is an essential component in the control of the spread of VTEC and this is of particular significance to the organic farming industry, where manuring is used extensively. The regulation of the disposal of animal faeces, slurries, slaughter house waste and untreated human sewage from septic tanks should be examined in the light of evidence relating to the survival of pathogenic micro-organisms in natural environments such as on pastures, in soil, and in waters.

Crops that undergo limited or no heat treatment before eating (such as salad crops), and those that are difficult to wash (such as soft fruit) present a recognised potential risk to human health, particularly when contaminated with pathogens whose infective dose is low, such as *E coli* O157, or pathogens, such as the protozoon parasites *Cyclospora* and *Cryptosporidium* that can persist as cysts in chlorinated waters used in food processing. Stringent monitoring of such ready-to-eat foods is essential, and there is a need to identify improved methods for reducing or eliminating contamination of foods without compromising the physical, organoleptic and keeping properties of the foods. Of course, foods that are heated thoroughly at normal cooking temperatures do not normally present a hazard unless cross-contamination with contaminated surfaces or uncooked food occurs.

Risk assessments performed by government and industry on the general safety of Genetically Modified Organisms (GMOs) and transgenes in genetically engineered plants need to be reviewed periodically in the light of new scientific information. For example, the exchange of genetic material between micro-organisms in natural environments (waters, soils, surfaces) was thought to be insignificant because the recipient organisms are not "competent" to accept DNA; exchange was thought to take place only in nutrient-rich environments and in dense populations of microbes. Such assumptions are now considered to be oversimplifications. The potential for genetic exchange between GMOs or transgene DNA with micro-organisms in natural environments and in the gastrointestinal tracts of farm animals may be underestimated, albeit still with only small risk to public health, and underscores the need for continued monitoring and research.

The proposed Food Standards Agency will only be able to function effectively and efficiently if it has control of funds sufficient for the various programmes of monitoring, implementation, and education; particularly important is the provision of adequate support for research by government and independent laboratories into all aspects of the persistence and growth of pathogens in foods during the various stages of food production and allied processes, and for the monitoring of changing patterns of foodborne illness in the UK.

29 October 1997

APPENDIX 44

Memorandum submitted by the National Food Alliance (C61)

The National Food Alliance is very pleased to have been invited, in your letter of 30 July, to submit written evidence to the committee in the context of the forthcoming White Paper on the Food Standards Agency. As you may know, the National Food Alliance (NFA) represents over 70 national public interest organisations including voluntary, professional, health, consumer and environmental bodies working at international, national, regional and community level. It aims to enable people of the United Kingdom to fulfil their potential through food policies and practices that enhance public health, improve the working and living environment, and enrich society. I have enclosed the latest issue of our members' newsletter, *Digest*, for your information which also includes, on the back page, a membership list.

It is in the nature of a democratic alliance like the NFA that responses to consultation documents take some time to arrange and we are grateful for the short extension to your deadline which has allowed us to discuss the Committee's inquiry at a recent NFA members' meeting. This response therefore reflects the main points of principle agreed at that meeting and does not comment in detail on the questions outlined in the Committee's remit. Individual NFA members may make (or may have already made) more detailed submissions to you, based on their particular expertise.

As you will note, the NFA is a broad alliance, but it has nonetheless reached a remarkable degree of consensus about a range of food policy issues, the importance of the proposed Food Standards Agency (FSA), the work it should undertake, and how this should be carried out. The following summarises and updates a longer submission by the NFA to the Cabinet Office in response to *An interim proposal by Professor Philip James for a Food Standards Agency* (the James report), which is enclosed [not printed]. We have also enclosed a copy of *The food we deserve: the National Food Alliance's food policy proposals* [not printed] which sets out more fully, and with supporting references, the broader food policy context in which the Agriculture Committee is working.

Briefly, the NFA recommends that the Agriculture Committee:

1. expand the remit of its inquiry to incorporate all food standards issues related to agriculture which may fall within the remit of the FSA, and specifically the links between agriculture and the nutritional quality of the diet, and links between environmentally sustainable agriculture and food standards;

2. acknowledge the importance of consumer and public interest involvement in food policy formulation as a way of, *inter alia*, restoring the links between urban dwellers and people who work the land;

3. place due emphasis on how new food policies, which we trust will be developed, are effectively implemented, monitored and evaluated.

1. Food Safety, Nutrition and the Environment

Diet-related diseases and conditions (such as coronary heart disease, some cancers, strokes, dental diseases, diabetes and digestive disorders) account for a far higher burden of suffering and premature death than food poisoning. Thus the acute need to improve food safety (ie the infection and contamination of the food supply) needs to be tackled in the broader context of the chronic need to improve public health as a whole. Without this broad food policy remit, the incoherence which has bedevilled much of UK food policy to date, and which so confuses and irritates the public, is likely to continue. The FSA might succeed in improving, say, the micro biological safety of burgers, thereby reducing the incidence of food poisoning. Yet if consumption of high fat meat products, such as burgers, does not decline, overall morbidity and mortality may well increase.

Similarly, the principles of environmental sustainability should be integrated into the Agency's work. Without these, further inconsistencies would inevitably arise; recommendations to eat oily fish for health reasons, for example, would by undermined by recommendations from elsewhere to reduce fish consumption in order to preserve fish stocks and a viable marine ecosystem.

Genetically modified (GM) foods are another example of the interdependence of agriculture, environmental sustainability, food safety and nutrition. The projected advantages and disadvantages of GM foods have been well-rehearsed elsewhere and will not be repeated here, and the NFA membership holds different views on whether the balance is broadly positive or negative. They share, however, a common concern that the current handling of GM foods is violating two essential principles: consumer choice and the precautionary principle. Both principles would be better served by effective segregation and clear labelling of GM foods and food ingredients and we would urge the Agriculture Committee to pursue this issue.

2. Consumer and Public Interest Involvement

Consumers' ignorance of agricultural practices was starkly revealed with the BSE crisis, but it should have surprised no-one. The majority of the UK population live in towns and cities and have done so for generations. Their link with the land has been effectively severed, and although MAFF has made great strides in recent years to involve individual consumers on some food policy advisory committees, agricultural committees remain largely devoid of consumer or public interest representation.

However, the James report helpfully drew attention to a long-standing grievance by consumer and public interest organisations; ie that we are asked, increasingly, by government and industry to contribute a public interest perspective to the policy making process, but the costs of providing this contribution are rarely acknowledged, let alone adequate funds offered to help meet the costs.

There is no easy answer to this problem. Substantial additional cash for the core work of public interest groups is unlikely to be forthcoming from government sources. In any case, it would not be appropriate for independent organisations to become too reliant on government money. Nonetheless, government funding for the core—as opposed to project work—of public interest groups in this area is currently so low as to merit some increase, however modest. The cost efficiency of many public interest organisations is such that sums which, by usual standards, are tiny, can yield substantial additional work.

Such funding could be linked to training for public interest representatives on government and other committees, including agricultural ones. It is important, though, that training and other support (including, where appropriate, payment) for public interest representatives be provided by the sector itself and not by government. We feel it is incumbent upon the sector to support its own representatives—volunteer or otherwise—even if this support is itself funded, in whole or in part, by government. The danger of direct government support for individuals is that some individuals may be "captured" by the very committee they are supposed to be overseeing.

Similarly, we acknowledge the suggestion in the James report that current public involvement is rather centralised at present and that innovative methods could be pursued to increase public participation at local level in the food policy making process. We hope that the Agriculture Committee will recognise the dangers of direct government funding of such participation. Many NFA members and observers have substantial, nation-wide networks of individual members and local groups. It would be unfortunate if, in trying to increase public participation through new networks, government inadvertently undermined the viability of those that already exist, and which might themselves be engines of innovation, given suitable investment.

3. Implementing, Monitoring and Evaluation Food Policies

The BSE crisis also highlighted the extent to which food policies may fail not because they are inadequate in themselves, but because they are implemented poorly or not at all. This is a complex issue but it is the NFA's view that it cannot be properly addressed without examining whether or not sufficient funds are available—at national and local level—for food policies to be effectively implemented, monitored and evaluated. According to the Association of Public Analysts, the World Health Organization, for example, recommends a food sampling level of 2.5 per 1,000 population. In the UK the number of food samples taken for analysis is currently 1.31 per 1,000 population, and still falling.

Similar enforcement problems afflict the area of food labelling and advertising, and the level of misleading and, occasionally, illegal labelling and advertising shows no sign of falling. Although not a life-threatening contravention of the law, as food safety breaches can be, this systematic failure confounds consumers' attempts to choose a healthy diet, undermines such faith as remains in the ability of the law to protect their interests, and allows food producers with low standards to compete unfairly against those with more scruples.

Equally, no-one wishes to see the UK's agriculture and food industries immobilised in regulatory red tape. The effectiveness of food policies—regulatory or otherwise—should be regularly monitored, evaluated and, where necessary, the policies should be modified. Yet this too costs money and we recommend that the Agriculture Committee explore options for raising funds for this purpose in their inquiry.

Please do not hesitate to get in touch with this office if you would like to pursue any of the issues raised in this submission.

24 October 1997

APPENDIX 45

Memorandum submitted by Farming and Livestock Concern (C64)

1. Introduction

Food safety is taken to mean that the food: (1) Provides all the essential nutrients at adequate levels. (2) Is free from harmful chemical residues. (3) Is free from disruptive medicinal and growth promoter residues, such as hormones and antibiotics. (4) Carries no infectious agent (bacterial, fungal, viral etc) or its toxin. (5) Is free from additives that may be harmful to health or behaviour. (6) Is free from constituents whose adverse effects are unpredictable. (7) Is fully labelled so that those sensitive to an ingredient or with ethical objections can avoid it, and so that any detrimental effects can be traced.

2. Nutrition

We welcome the importance given to nutrition in the Food Standards Agency report. Issues which the White Paper should address include deficiencies in trace element intake. The post-war years of the intensification of agriculture have accelerated the drain of trace elements from our soils and there has been no policy to restore them. As a result the intake of certain elements by the population could be inadequate, in common with the subclinical deficiencies that are common in our farm animals. This is particularly the case with selenium. Selenium deficiency is widespread in most UK soils. Levels are frequently as low as 0.3 to 0.1ppm, where the optimum is 0.8 to 1.2ppm[1]. Selenium depletion was intensified as heavier crops and higher stocking rates "carried" it or "walked it off" the fields, and via leaching due to acid rain. Selenium's function as an essential trace element was so neglected it was not thought necessary to ask the Soil Survey to survey selenium levels until the late eighties when it was done on stored samples for England and Wales but in Scotland no funds could be assigned to it. An adequate selenium intake in the human population was nevertheles assured until the mid-seventies from Canadian wheat, containing 200 to 500mcg/kg, but with the accession to the Common Market, trade levies curtailed these imports which were replaced by UK wheat containing 20 to 50mcg/kg. As a result the midseventies intake of 60mcg/day fell progressively to 34mcg/day in 1994 ie below the lower reference nutrient intake (RNI) of 40mcg/day. In 1985, SW Scotland survey showed blood serum levels well above the minimum desirable level of 90mcg/1 in most samples, but by 1994 most samples were well below it [2]. On farms where animals must depend on intake largely from grass, forage and home-grown grain, subclinical deficiencies cause health problems and unnecessary losses, notably from infertility, lameness and mastitis reflecting depressed immune systems [1].

The UK Government's assertion that there was no need to take any action contrasts with that of the Finnish Government. In Finland soil selenium levels are often low and also of low availability due to high rainfall and acid soils. The post war-intensification led to the appearance of acute deficiency symptoms in farm animals and a correspondingly low intake of 25mcg/day in the human population. Worried that this might be contributing to cardiovascular disease and cancers, the Ministry of Agriculture and Forestry in 1984 made it mandatory to add 6mg selenium/kg to every bag of fertiliser for grassland (equivalent to 3gm/ha) and 16mg (now reduced to 6mg) for cereals in order to raise the grain content from 10mcg/kg to 100mcg/kg, with regular monitoring of food products and population blood levels. The rise in farm animal and human intake was immediate and dramatic. Intake is now 90mcg/day with a 40 per cent contribution from meat, 25 per cent from dairy products and 20 per cent from cereals. Serum blood levels rose from the region of 64mcg/1 to that of 118mcg/1 [3]. Clearly the best way of rectifying a mineral deficiency is to restore soil levels. Trace Element Services have restored selenium, copper, zinc, cobalt, iodine and others as required on some 2,000 farms since 1983 with outstanding improvements in animal health and productivity and in the economic fortunes of the farm inasmuch as feed and fertiliser inputs and veterinary costs are greatly reduced. Problems that vets could not solve have been rectified by attending to nutrition and farms that were becoming no longer viable are back on their feet [1].

Selenium is a crucial trace element [4, 5]. As an antioxidant it contributes to the control of free radical damage and to liver detoxification pathways. As a seleno-enzyme it is essential to the synthesis of the active thyroid hormone T3. A seleno-protein in sperm ensures the integrity of its midrib and thus its motility and viability. Falling sperm counts are associated with oestrogen mimics (see section 3) and without detracting from their importance, nevertheless raising the selenium intake of AI (artificial insemination) bulls at an AI centre markedly improved sperm quality (Goodwin-Jones pers comm). In the female adequate selenium levels promote easy birth in both humans and animals and play some unidentified role in pregnancy, preventing early foetal death. Selenium deficiency contributes to the low conception rate of approximately 50 per cent in UK cattle. Farmers whose pastures have been treated with trace elements report conception rates have risen to up to 90 per cent [1], from which we may deduce that couples with an infertility problem would do well to raise their selenium intake first, before embarking on IVF. Finally selenium is essential to immune function [6], and in addition adequate levels have been found to prevent the mutation of less virulent viruses to virulent ones which is important for our ability to resist new strains of flu [7].

Clearly, the Agency should insist the MAFF takes the necessary measures to ensure restoration of selenium and other depleted nutrients to our soils so that the consumer can depend on an adequate intake from home-grown foods.

3. CHEMICAL RESIDUES

These will primarily be due to pesticides, fungicides, parasiticides and herbicides, whether used on the crop or in store. In 1994 MAFF's Working Party found out of 3,700 samples examined for various residues, 31 per cent carried detectable levels and 1 per cent were over the maximum residue limit (MRL) [8]. This is comparable with a US finding of 35 per cent and 1 to 3 per cent respectively [9].

However a year later MAFF issued a warning of five high toxic residues in carrots, recommending they be peeled, topped and tailed. MAFF's survey of milk products in 1996 found 99 samples out of 216 contained detectable lindane, with nine samples above the MRL (10). Lindane or gamma-HCH is linked to a range of health problems. It is banned in 14 countries but despite protests it is still sprayed in the UK against soil wireworms and leather jackets on some two million acres of rape, sugar beet, wheat turnips, swedes and winter barley. High levels of lindane in Israeli dairy produce were linked to breast cancer before it was banned there in the late seventies (11). Unacceptable levels of chemical residues are likely in imports from the third world, where on the big estates spraying can be indiscriminate, careless and negligent of workers' safety. A MAFF survey covering both UK and imported produce in 1997 reported that nearly one-third of common fruit and vegetables contained residues, with 40 per cent of some breaching statutory limits. Of imported samples 41 per cent contained levels over the MRL. The public were advised to wash and peel fruit (12), but this assumes only surface, not systemic contamination.

Pesticides which may end up in our food include the organochlorines, organophosphates, carbamates and pyrethroids. Clinical studies, wildlife observation and experimental animal data have shown that exposure to these may alter the immune system's structure and function, lowering resistance to infections and cancers; overload the liver's detoxification system; and disrupt the endocrine system (pituitary, adrenal, thyroid and reproductive glands). Groups most at risk are the pregnant woman and the child she carries, the children, elderly, sick and malnourished (13,14).

Although consumers tend to have only low dose exposure to pesticides in food, which most metabolisms readily detoxify, the danger lies (a) in a cumulative intake with storage in the body fat and (b) to those that have already been overexposed to some chemical at work or in the home, and become sensitised so that they react to levels well below the MRL with allergies and food intolerances. Such people must protect themselves by only eating organic food. Although now only a fraction of the population, their plight should alert us: asthma was a rare condition 30 years ago, and chemical sensitivity could become as rife as is asthma today, and similarly indicative of an ill-understood disturbance in the immune system.

Nor should we forget the safety of the producers of our food: the thousands of sheep farmers, arable farmers and tractor drivers. These, and also their wives and children—since they bring home the inhalable residues on their clothes—are exposed to the full force of the organophosphates and cocktails of arable crop chemicals. Hence in the cases of chronic OP and other poisoning all members of the family can be affected.

The scale on which pesticides are now used have made our toxicological methods incapable of setting "safe" residue levels or of detecting toxicities. These methods were developed to assess risks using dose response curves and acute clinical reactions to single poisons and of a different kind: mercury sulphur dioxide, drugs etc. But regulatory attempts at management cannot deal with problems such as:

(i) Individual toxicities cannot as now, be considered separately. They may be additive [15] or synergistic like the pyrethroids and organophosphates, as Gulf war syndrome investigators found [16]. DowElanco's chlorpyriphos (dursban) when mixed with other chemicals caused paralysis in addition to its own side-effects [17]. To assess the risks of combination of three or more chemicals would be physically and financially impossible [18].

(ii) Risk assessments are made on the assumption of acute exposure and take no account of chronic, cumulative, long term effects. This has happened in cases of OP poisoning where sheep dippers and crop sprayers did not suffer the acute symptoms but instead developed either the transient flu-like symptoms of sensitisation or the chronic disabilities of muscle and mitochondrial dysfunction as in ME, memory impairment or more severe neural degeneration as in paralysis, MS or Parkinsonism [14, 19]. Pesticides are usually lipid soluble and where the liver cannot degrade them will be diverted for safe storage in body fat and released slowly to the circulation over time, or rapidly as in weight loss from stress or sickness, or in pregnancy where they are passed to the foetus via the placenta, or by nursing mothers to the baby via their milk [18]. If the developing foetus is affected there is the possibility of endocrine disruption (see below) or of birth defects, as has been claimed for chlorpyriphos [20], in addition to the side-effects recently listed by the Environmental Protection Agency (EPA) and not disclosed by DowElanco [21]. Dursban is chiefly used in UK for wheat and topfruit. Another teratogen could be the fungicide Benomyl (Benlate) which is being held responsible for babies born without eyes, affecting the children of 40 UK families [22]. Dupont have withdrawn benlate from the UK domestic market, but it is still used in agriculture.

(iii) Wild life studies and clinical observations on humans startled researchers in the 1980s who reported a new kind of toxicity, the endocrine disruptor chemicals that mimic oestrogen, androgen, thyroid and other hormones. Although their molecular structure bears little resemblance to the hormones they usurp, they suppress or overactivate their function inducing cancers, immunosuppression but above all abnormalities in the development of offspring. Toxicological protocols are impotent to apply risk assessment methods to this class of toxin [15] since:

(a) The timing rather than the dose is crucial. As with thalidomide, the damage is done at some precise stage of foetal development, inducing irreversible changes that disrupt the function of the reproductive organs; but the resulting defective sperm viability and female infertility may go undetected until adulthood. Sperm counts have fallen in younger men born after 1969 by 50 per cent compared to older men [23]. Cases of undescended testicles doubled between 1962 and 1981 [24] in Denmark, US, France, Scotland and Belgium. In women there has been a rise in endometriosis, ectopic pregnancies and infertility [25, 15]. Various cancers, structural defects in the reproductive organs, defeminisation and demasculinisation have appeared, although most dramatically in wildlife. The long time span for humans since the intake makes the cause of the damage well-nigh impossible to trace ie to prove, but the wild life studies and animal experimentation data should be sufficient evidence for us to make the connection.

(b) It is assumed that the larger the dose the more toxic it is. This is not necessarily the case with endocrine disrupters. Very often the small dose is toxic where the larger dose can be tolerated. This is because the large dose may desensitise the hormone's receptor and put it out of action, while the minute dose will activate it, for hormones can be active in parts per/billion.

Chemicals of this class that can enter the food chain include the organochloride pesticides DDT, hexachlorobenzene, DEHP (a phthalate), dicofol, kelthane, kepone, lindane and methoxychlor; synthetic pyrethroids; the triazine herbicides (eg atrazine and simazine); EBDC fungicides; the PCBs and dioxin and the alkyl phenols [15 p153]. With the exception of lindane most organochlorines are banned in UK but residues may be high in imported produce, especially from developing countries where manufacturers now direct their exports. According to an EPA report 1994 [15] the PCBs (polychlorinated biphenyls) and dioxins are found in animal fat, dairy produce and fish. Dioxins are released into the atmosphere by incinerators burning chlorinated—mainly plastic—waste and farms close to industrial sites are most at risk from their being taken up into the animals' fat and released into the milk. The alkyl phenols are in the plastic now wrapping most of our food [26] and lining 85 per cent of US food cans [27]. Evidence indicates these can be leached out. The World Wildlife Fund has been urging the UK Government and EU to phase these phthalate plasticisers out, since we are contaminating the North Sea via sewage. They want the manufacturers to be made to monitor their products and clearly label goods that have not been tested [28].

The justification for pesticides is that they are necessary to prevent crops from being destroyed or spoiled in storage. Yet despite the enormous increases in pesticide use, US figures show that 7–13 per cent more crops are lost today from pest damage than were lost in 1945 when pesticide use was almost zero [9]. This is because the traditional practices that helped control pests have been abandoned. These include (a) rotations (b) a patchwork of crops instead of extensive moncultures (c) insect predators ie other insects, now killed indiscriminately by pesticides and birds that have lost their habitat and grub and insect food supply (d) trickle inputs of nitrogen from legumes and manure. Crops fed with high doses of nitrogen are succulent with weakened defenses, and attractive to insects.

Farmers are locked into a treadmill which is all the more crazy when it is calculated that only 0.1 per cent of pesticide reaches the target pest [9]. The public costs of chemical farming are astronomical but difficult to assess: costs in terms of public health and individual suffering, of wildlife destruction and loss of predatory species, soil erosion, and of water pollution necessitating huge investments by water companies to provide safe drinking water, and diverted from investment in water conservation and advanced sewage treatment. Integrated Pest Management (IPM) is an attempt by mainstream agronomists to deal with these problems, but only skilled Organic Farming will cut the gordian knot and provide a total solution.

It is clear that no one is benefiting from a plethora of pesticide inventions except a handful of chemical companies. Even these, now under pressure from pesticide resistance, litigation and adverse publicity are seeking an alternative: the genetic manipulation of crops with genes for pest and herbicide resistance.

4. HORMONES

Hormone growth promoters and other stimulants are used to accelerate growth and put weight and leanness on beef cattle and crated veal calves. It can be said that their use in Europe developed in the late seventies out of the drive to increase agricultural production by intensive methods, and where also they enabled the small farmer to compete against the large intensive unit. One of the outcomes was a "beef mountain" with huge stocks in intervention and the payment of large subsidies for the export of live cattle and beef in order to get rid of it. Apart from the antibiotics (section 4), the major growth promoters include (i) the anabolic steroids (or their synthetic derivatives) oestradiol, used in conjunction with testosterone or progesterone for increasing growth rate and muscle mass, and administered as an ear implant (ii) clenbuterol ("angel dust") a beta-agonist feed additive banned in EU and in US because its residues cause dangerous cardiovascular damage in humans (c) thyroid inhibitors and corticosteroids that increase weight by causing water retention. In response to consumer concern all three categories were banned in EU in 1988 and the importing of meat containing them prohibited. UK alone opposed the banning of what MAFF advised were the "safe" hormones oestradiol and the synthetic oestrogen zeranol; testosterone and progesterone and the synthetic androgen trenbolone. This brought the UK in line with the US position. Brazil however maintains the ban in order to secure the EU market.

Due to lack of surveillance a lucrative black market developed in clenbuterol via imports from eastern Europe and Asia. An EU survey published in 1995 found widespread clenbuterol residues in meat products, particularly in Spain, Ireland, France and Belgium. There was no evidence of any in UK, but as our beleaguered farmers pointed out the rising volume of imported meat might contain it. Public awareness on the continent of the widespread use of illicit drugs led to a drop in beef and veal sales long before the BSE/CJD announcement of March 1996, and following the murder of a Belgian vet meat inspector by the suspected "meat Mafia", consumer demand for uncontaminated meat intensified.

In UK the "hormone lobby" led by Professor Eric Lamming of Nottingham University argued that not only was there no scientific evidence that the five listed hormones endangered human health, but if these were legalised rearers would have no need for harmful drugs like clenbuterol. The US experience does not bear this out. Clenbuterol allows crated veal calves to be ready for the market at 12-13 weeks rather than the 16 weeks of the hormone-implant calves, cutting off one third of the growing period.

The FDA were aware that the big veal corporations had been smuggling in clenbuterol since 1988, but did nothing about it. In a courageous undercover investigation the Humane Farming Association obtained calves' eyeballs from a range of slaughter houses and sent them for analysis. One third were found to contain clenbuterol[30]. A conspiracy between the major feed supply companies and veal calf factory corporations was then unearthed by the US Department of Justice[31]. The clenbuterol was smuggled in from Holland and distributed across the United States. To date three feed companies and two veal corporations have been indicted and prison sentences and heavy fines imposed. An extradition order for the architect of the scheme, a feed supplement manufacturer in Holland, has been issued, so far without effect[30]. Although widely reported in US, this scandal was barely mentioned in UK.

Meanwhile the US, Canada, Australia and New Zealand have united in an attempt to get the EU import ban overturned by the WTO court, on the grounds that (a) it breaches the Sanitary and Phytsanitary measures agreement concluded during the GATT Uraguay Round Settlement 1994 and (b) there is no scientific evidence of their harmful effects on humans. EU scientists meeting in December 1995 concluded that although the substances had so far proved safe "the toxicological evidence for their acute and long term effects on human beings is far from complete." The EU Commission confirmed the ban 29 April 1997—again opposed by UK—Fischler arguing that under the GATT trade deal each Government is free to decide an appropriate level of protection. Last month the EU lost their case and is considering an appeal. In anticipation that this too may fail, Brazil is reconsidering its position, since allowing anabolics could mean an increase of up to 20 per cent in their beef production.

Should the EU's case be lost, the US beeflot rearers, armed with hormone implants and in possession of the cheapest feed and the cheapest fuel in the world, and protected by the fact that it is illegal there to require labelling of hormone beef (although provided the rearer produces sufficient documentation that no hormones were used, some authorities may allow a label to say so[31]), are poised to flood the European market. It may not have occurred to them that this may drive down even further the demand for beef.

In the UK it is the farmers themselves, including the NFU, who want to retain the import ban. Nor are farmers in favour of using hormone implants on their own cattle. Consumer confidence was lost as a result of BSE and now as it returns, they do not want anything that will undermine it.

But it is not confidence but safety that is the issue. Professor Richard Southwood in a letter to the *Times* October 20 1997, argued that although there was not at present any evidence, we shold learn the lesson of BSE and apply the precautionary principle. I suggest the evidence is already there. Professor Lamming's argument that the anabolic steroids in treated beef (0.005μg oestradiol and 0.025μg progestorone/250 kg meat) are miniscule compared to their daily production in a prepubertal child [29] is irrevelant bearing in mind (i) that the hormones are endocrine disruptors and there are no "safe" levels because small doses can for different reasons be as disruptive as large ones (ii) The greatest risk is not to the adult or the prepubertal child, but to the pregnant woman's foetus at a certain stage in its development. We have evidence that this is so, but the kind of scientific proof demanded is not available. Diethylstilbestrol (DES), the first endocrine disrupter to be identified was prescribed as a therapeutic drug for pregnant women and others, and as a ruminant growth promotor for over 30 years before its delayed long term damage to male and female reproductive function, and also to the immune system and as a carcinogen was traced back to it [15 p52–67, 235–254]. A drug, in view of the time-span is traceable with difficulty, but to scientifically prove a food source would be out of the question.

The genetically engineered bovine growth hormone (rBGH), known in UK as bovine somatotrophin (BST) was developed by Montsanto for injection into cows to stimulate them to produce more milk, in the expectation that it would be a billion dollar earner in a world wide market. It was cleared by the FDA in November 1993, but in the EU it was feared it would only add to the milk lake, and a moratorium was put on it. This was extended in December 1994 to the year 2000 by the Agricultural Council of Ministers, with UK opposing. Dairy products containing BST milk however could still be imported. These were unlabelled. The FDA had made it illegal to state that a product "does not contain milk from cows treated with rBGH" in order to protect it from discrimination, thereby overriding the concern of consumers. After a number of court battles by consumers and the smaller dairy companies, the FDA now rules that it can be so labelled, providing the wording does not imply that rBGH-free products are superior to those that contain it. Montsanto however, in order to protect its investment used its influence to induce 14 states, spearheaded by Illinois 1 February 1995, to pass Agricultural Disparagement Acts where it is a class A misdemeanor to make negative comments about genetically engineered and other agricultural products and processes.

In Britain the majority of farmers do not want BST, and in both UK and US many, including farmers, scientists and the public want it banned both on grounds of animal welfare and human safety. Animal welfare problems, at first denied and later listed by Montsanto as protection against litigation, include reproductive disorders, excessive twinning, mastitis, increased body temperature (thousands of treated dairy cows died in a midwest heatwave), leg disorders, injection site reactions. Humans are not thought to be affected by the BST hormone in the milk, but levels of its metabolite Insulin Growth Factor–1 (IGF–1) are raised by up to 25–70 per cent in the milk of treated cows. IGF–1 does not pass into the bloodstream but is protected from digestion by the milk protein casein [32] and studies show that the mucosal cells of both human and bovine gut tissue proliferate at twice the normal rate when exposed to raised levels of IGF–1 indicating it as a potential carcinogen [33]. This research has been done by independent scientists in UK and US. The Vet Products Committee expressed doubts as to its safety for animals and humans, and the Vet Medicines Directorate took it out of their hands and passed it as safe, without commissioning further research. Members of advisory committees are bound by section 118 of the Medicines Act 1968 not to reveal what was discussed. Their members are not "independent" as the Government professes. Since public funding has largely been replaced by commercial funding the majority are beholden to one or more chemical companies for their consultancies, their research funding, their livelihood and career prospects and those of their students.

MAFF appears to have accepted that farmers are too beset with quota and other problems and do not want BST. However they are considering how it could be used to prolong lactations. They have funded the Hannah Research Institute in Ayrshire to study the feasability of prolonged lactations, to eliminate the present practice of getting a cow in calf every 12 months and drying off high yielding cows when they are still full of milk. This system induces stress and possibly mastitis. There is a wasteful culling of cows that fail to conceive in the allotted time, and the production of too many surplus dairy calves [34]. All these laudable aims could be achieved by a change of management. But in a letter to the Farm and Food Society (26.11.96) the Hannah Director hints that extended lactations would be assisted by BST. More explicitly an article in Farmers' Weekly [35] describes experiments to prolong lactations in goats, where it was proposed that cows would be split into two herds, one for breeding, the other, by the use of BST, for persistent lactations throughout their adult life. Neither animal welfare nor food safety issues appear to have been addressed.

There are signs that US farmers are finding too many problems with rGBH and sales are down. It can be anticipated that Monsanto's next move may be to genetically engineer the suppression of somatostatin, the hormone that inhibits the over-production of the cow's own somatotrophin growth hormone.

5. Antibiotics

Medical and veterinary practitioners are worried at the development of antibiotic resistance and the possible loss of a therapy which has enabled us to combat infections and epidemics since the 1940s. Antibiotic abuse is blamed for the resistance due to overuse, and also blamed is the inclusion of low levels of antibiotics in the feed of intensively reared pigs and poultry, where it is given as a prophylactic and as a growth promoter. Intensive rearers maintain that the production of cheap pig and poultry meat, eggs and also farmed fish would be economically impossible without them, the animals would not survive in the intensive conditions but succumb to infections, and there would be a risk to human health.

Antibiotic resistance develops (i) when a mutation in a fraction of the population enables it to circumvent the mechanism that destroys it or stops its growth, (ii) via the horizontal transfer of a resistant gene, genetic fragment or more frequently plasmid (loop of DNA) from one bacterial strain or species to another. Horizontal transfer is common in the microbial world. Studies of marine bacteria found they freely take up [36] plasmids floating in the water and reassemble the DNA in a different order. It is thought that a resistant strain in the gut of a chicken could transfer its resistant gene to a bacterial population in the gut, throat or injured skin of a human. For this reason since 1970 antibiotics used in medicine are illegal as growth promoters, although penicillin and chlorotetracycline are still permitted in US. In December 1996 the EU Commission followed the example of Denmark, Germany and Australia and banned the popular growth promoter avoparcin because its molecular structure differs in only a few details from that of vancomycin, the only antibiotic effective against Staphylococcus aureus now causing recalcitrant infections in hospitals. A few months later strains resistant to vancomycin appeared in Japanese hospitals. Nevertheless, the European Scientific Committee on Animal Nutrition advised against the ban, partly because S aureus is resistant to vancomycin in US where avoparcin is not used, but mainly because many scientists are convinced that low level antibiotics in animal feed do not induce resistance to them. Low doses, it is thought, may disable bacteria in different ways to the high therapeutic doses. As against this, nearly half of 22 swabs taken from chicken carcases were found to be vancomycin-resistant [37]; and out of 10 Norwegian farmers using avoparcin five were carrying bacteria resistant to vancomycin, while five other farmers who had not used it carried none of these bacteria. It was thought the affected farmers might have inhaled the avoparcin from feed dust. Whether or not low level antibiotics cause resistance, the undoubted hazard of this class of growth promoter is (a) that the stressed, overcrowded animals present a sitting target for disease epidemics among pigs, poultry and fish, and (b) their living conditions are such that they become carriers of micro-organisms—salmonella, campylobacter etc—that don't affect themselves but are virulent to the human being.

In response to public concern, Sweden banned the use of antibiotics for other than therapeutic purposes in 1985. Initially there were problems leading to the death of 50,000 pigs with diarrhoea and to necrotic enteritis in chickens, and thus to an increase in the use of antibiotics in therapeutic doses. But it became clear that the cause of the problems was poor housing, management and hygiene, and faulty feed composition. Once these were rectified the need for antibiotics was reduced and by 1995 their total vet use was 50 per cent lower than it was before the ban. Antibiotic resistance to tetracycline fell from 14 per cent to nil, and to streptomycin from 78 per cent to 17 per cent. It might be thought the Swedish livestock industry would have been put to economic disadvantage, but the estimated cost of the ban is calculated to be about 5p/kg [40]. In order to harmonise with EU member states, Sweden has been told it must end its ban by 1999. Perhaps it would seve the EU better if all members followed Sweden's example.

6. Food Poisoning

A new study by the WHO suggests that poisoning due to contaminated food is on the increase, although difficult to guage due to under reporting. It puts the annual toll in US at 6.5–33 million cases with 5,000 deaths [41]. The rise in bacterial food poisoning in the developed world prompts the question as to whether it correlates with the increase in (a) food processing (b) intensification in animal rearing.

Attention has focussed in UK on the recent outbreaks of haemorrhagic colitis and the life-threatening haemolytic uraemic syndrome following infection with the specific verocytotoxin-producing strain of Ecoli, VTEC 0157-H7, or E coli O157. Professor Hugh Pennington's report [42] surveys the evidence for the source of the agent, the circumstances that provoke its appearance and the way it is transferred along the food chain, with recommendations as to how it can be controlled.

Many strains of E coli are part of the normal microflora of the colon of animals. They may become pathogenic and cause grey scour diarrhoea (colibacillosis) in young animals. They also may induce mastitis or infect the genito-urinary tract or open wounds. Other verocytotoxin strains occassionally cause systemic haemorrhage. It is thought pathogenicity occurs when Ecoli finds itself in an inimical environment. The O157 strain however, although carried by cattle, sheep and pigs appears not to affect them, but is only pathogenic to humans.

It has been suggested [41] that it arose via the horizontal transfer to E.coli of a gene from the human pathogen Shigella dysenteriae, carried by a bacteriophage (bacterial virus). VT1, one of the two principle verocytotoxins is almost identical to the Shiga toxin and has similar enterotoxic effects [42]. It should be noted that Shigella dysenteriae causes bloody diarrhoea, is carried from person to person, is confined to humans, has no animal reservoir ie is not carried by them, and is not present in the environment [43]. If then it is true that E coli O157 arose via the horizontal transfer of a S.dysenteriae gene this would suggest it originated in humans, either in situ or more probably in the sewers, and reached the animal carriers perhaps when fields were spread with sewage sludge.

Source of the Infection

Outbreaks of E coli O157 poisoning have also occurred in US, Canada, Europe, Japan and risen from a handful of cases in the early eighties [42]. Most cases are traced to red meat, particularly insufficiently cooked meats such as hot dogs and hamburgers (the "hamburger bug"). But outbreaks are increasingly also traced to fresh fruit and vegetables and unpasteurised fruit juices, sometimes with evidence that the contamination was due to manure fertiliser. A huge Japanese outbreak involving 5,700 people in Sakai City was associated with contaminated white radishes [41]. Raw milk and cheeses are another source. On one farm this was able to be traced to faecal contamination from presumably unwashed teats, rather than from the cow's own milk [42]. This is a management problem and easily corrected by washing and drying teats with individual paper towels.

Tests show the E coli O157 is extraordinarily persistant. One investigator found it lived for 188 days on lab surfaces at 10°C and for 81 days on grass [44]. From this it follows that (a) once it is allowed to be present it will survive in meat contaminated at the slaughter house, with very low numbers sufficient to cause an infection [42:2.10], a property it shares with Shigella; and (b) it can be picked up from grass or horticultural crops fertilised with raw manure long after this has washed into the soil. On ill-managed farms animals are turned out on slurried fields even before it has disappeared. If I am correct and E coli O157 originated with human beings and was spread by sewage sludge and since the major way it will continue to be spread is via the slurry tanker, then an alternative must be found to these sloppy agricultural practices. Slurry is the product of large herds, silage and insufficient straw. It replaced the traditional farmyard manure where the heat engendered in the steaming heaps killed of harmful microorganisms and encouraged beneficial microbial activity in a halfway house to composting, the treatment perfected by organic farmers. Tests should be done on the survival of E coli O157 in slurry, sewage sludge, farmyard manure and compost to verify this hypothesis.

Cattle carriers

Surveys have shown that calves are more likely to carry E coli O157 than cows and weaned calves three times more likely than unweaned calves [42:4.1, 4.8, 4.9]. A major characteristic is its transience, appearing and disappearing in different animals and occurring most often after cattle have been housed or at the end of the winter before turn-out [42:4.12]. These observations all suggest stress and a depressed immune system is likely to be the activating factor, and prompts the question: does a good immune system stimulate the cow's colon microflora to suppress E coli O157 to undetectable numbers? See section (2) on the importance of nutrition to the immune system.

At the abbatoir, poor slaughtering and dressing procedures can lead to contamination of up to 85 per cent of carcases with E coli O157 and other strains. Transfer to the sterile flesh begins with faecal contamination of the hide; the erroneous assumption that washing will remove the bacteria, when nothing short of trimming will do this; and pressure, piecework, poor management and lack of operator training with the inevitable cutting of corners.

The entire organisation of the livestock and meat industry is now geared to make food poisoning outbreaks a near certainty. If the transient surfacing of E coli O157 is induced by stress, the most stressful conditions we could impose upon our cattle is to send them off to a noisy market, pack them into lorries among strange animals defaecating on each other, for a long journey to some remote abbatoir, decant them into a lairage some of which are badly run, poorly provisioned, dirty, full of more strange animals and surrounded by the smell of slaughter. All this because we have allowed hundreds of our smaller local abbatoirs to be closed down, with the connivance of EU regulations, MAFF and the MLC whose strategy and financial inducements promoted the large centralised abattoir. These now themselves face problems of overcapacity and threat of closure, while at the same time are undercapacity in times of crisis like BSE. The local abbatoir demanded by farmers means short unstressful journeys where the farmer if he chooses can take his animals himself. There is less pressure on throughout, and in most cases more care and attention is given to the individual animal.

In bygone days every butcher's shop had uneviscerated rabbit and poultry hanging outside. Hygiene was minimal to what it is today. Yet it did not lead to food poisoning. Meat was hung at the abattoir or in the butcher's for two weeks and as it dried out the E coli were killed off by commensal bacteria and by the post-mortem build up of acids that occurs in the unstessed animal [45]. We have neglected the science behind these traditional methods, built up from observation and experience. EU regulations, on the other hand now insist that meat packers pack the meat with all speed into plastic where any contamination will be sealed in, and given the survival powers of E coli O157, ensure its safe arrival at the butcher's counter, restaurant or housewives' kitchen.

7. Genetically Modified Organisms

Enormous pressure is now being put on Government, politicians, regulatory bodies and business on the need for competitiveness, for the UK to be a market leader in biotechnology or we face unemployment and the transfer of capital elsewhere. In addition we are reminded of the need to comply with WTO rules that no barrier be erected against international free trade, and unless the justification for such a barrier is scientifically proven, we will be taken to the WTO court and severe economic penalties exacted.

The assessments of safety of genetically modified organisms (GMOs) given by the UK advisory bodies (Advisory Committee on Novel Foods and Processes (ACNFP), Advisory Committee on Releases into the Environment (ACRE) and the Food Advisory Committee (FAC) cannot be depended on (a) because of the political pressures (b) because of the commercial pressures on themselves. With the demise of public funding for research, there are very few independent scientists now either free to speak their minds or funded to monitor what is being rushed onto the market, or to work out benign alternatives that are usually unpatentable. The modest profits of a business built on these alternatives are unattractive to the global corporations and the competition of that technology is a threat to their investments. (c) The GMO companies are putting out much seductive propaganda that only genetic engineering will provide the means to feed an over-populated world, enabling crops to grow where they could not grow before and replacing the polluting pesticides. Humanitarians should not be persuaded by these arguments. Hunger is due to poverty: the inability to buy food, seed, implements. Poverty is due to war, to the landlessness of those in urban squalor, to being displaced by bigger farmers and companies with capital, to loss of markets due to dumping of cheap food. Commercial companies already plan to genetically engineer tropical crops to grow in temparate climates or temperate crops that will produce tropical commodities—the gene for lauric acid from coconut and palm kernel has been inserted into rapeseed—wiping out the markets of developing countries. They will only invest in genetic engineering where profits are to be made, and profits are not made out of the poor.

No account is being taken either by the EU or the advisory committees of the imprecision, unpredictability and irreversibility inherent in genetic engineering. GE research for therapeutic purposes is more advanced than GE research for crop production, and there the simplistic expectations that genetic diseases would be rapidly cured by the insertion or deletion of a mutant gene has met a host of difficulties with respect to the gene carrier, gene targeting, gene stability and gene expression [46,47]. Yet in the UK and the EU, and aggressively in the US, driven solely by the chemical companies' haste to secure a lucrative market, GMOs are being released into the biosphere without monitoring of their ecological effects, and into the food chain without knowledge of their acute or long term reactions. The regulators are licensing these products without public discussions and in defiance of people's concern about the risks. These risks are:

1. The use of viruses with virulent parts deleted, chaemeric viral constructs and plasmids (loops of mobile DNA) (a) to carry the gene into the host DNA (b) as promoters to activate the inserted gene. Without its promoter the gene does not function. Cauliflower mosaic virus, related to human hepatitis B and HIV [48,49] is the most flexible and widely used. It is in Monsanto's soya bean. (c) For making multiple copies of genes. These ensure the efficiency of the insertion or step up the activity of a gene already present. Monsanto has applied for a licence for its transgenic potato "Newleaf" carrying the potato leaf roll virus with its replicase gene [50]. (d) To vaccinate plants for viral resistance.

This technology pays no heed to the known propensity of viruses or their fragments to hybridise with another virus present in the plant or with viral constructs to create what may turn out to be a novel virus, possibly more virulent and with a greater host range [51]. This was demonstrated when cauliflower mosaic virus injected into rapeseed combined with an infective virus to produce a more virulent disease. Moreover its genes were found to combine with insect viruses and propagate in insect cells [52]. These are no new hazards. We were alerted to their possibility as long ago as 1965 [53]. Moreover the viral constructs in order to be more efficient are designed to overcome the recipient species defense mechanisms which break down or inactivate foreign DNA. Thus the crop is to be disarmed against natural viral infections [54].

Those now irresponsibly dismissing the risks of recombination (exchanges of parts of genes) or pseudo-recombination (exchanges whereby one virus obtains the protein coat of another) should consider more carefully the implications of recombination experiments. Allison and Greene [55] genetically engineered the cowpea mottle virus with its capsid gene deleted. The capsid gene is necessary for viral infectivity. The isolated gene was then inserted into tobacco plants, and when these were inoculated with the crippled virus, four out of 25 plants were infected, the virus having reacquired its capsid gene. In a more recent experiment by D'Ann Rochon [50], a capsid gene from the cucumber mosaic virus engineered into plants was acquired by a different crippled virus and one out of eight of the inoculated plants became infected.

The biotechnology industry underplays these hazards and there are no regulations either in US or the EU that recognise the risk of recombination. US Department of Agriculture (USDA) are now sufficiently worried to have called a meeting to discuss possible restrictions [50].

2. Antibiotic resistance genes. These are inserted next to the gene in question in order to confirm it is correctly targeted. If it is not, cells exposed to the antibiotic will die. Antibiotic resistance genes may well be destroyed, as claimed, in processed food. But they will persist in unprocessed animal feeds—soya, maize, cotton cake etc. The genes could then be horizontally transferred via gut microflora to pathogenic species or even at an earlier stage on the crop itself via fungi colonising the plants [55] and thence to other hosts, including humans. It is symptomatic of the needless disregard for caution of Montsanto, Ciba-Geigy, Zenaca and others that they have neither searched for a substitute marker nor considered it necessary to remove it.

3. No gene works in isolation. Each one is part of a genetic network, and this is in turn a part of the intricate biochemistry of the cell that directs its expression. The cells' activities are organised by the organism and modified by the environment. Things can go wrong in genetic engineering because:

(i) One insertion or deletion of a gene can influence other genes to which it is linked; and if expressed in cells other than the target cell where the protein it synthesises has another function it may alter the properties and behaviour of the organism. Correct targeting is one of the unsolved problems of genetic engineering [56]. It is not only impossible to tell where it will land, but what it will do when it lands there. No one would have guessed that insertion of a cold tolerance gene from the arctic flounder fish into salmon would have stimulated its growth hormone and created giant fish. Or that growth hormone inserted into pigs would induce gastric ulcers, arthritis, cardiomelagy, dermatitis and renal disease [57]. Or that a bacteria engineered to degrade the 2,4-D herbicide would induce a degradation pathway that killed the soil's mycorrhizal fungi essential to plant nutrition, with a toxic by-product [58].

(ii) Making multicopies of a gene—a favourite ploy of crop biotechnologists—can alter its expression. BSE researchers found that extra copies (over-expression) of normal prion protein in transgenic mice induced in them muscular degeneration and nerve demyelination [59], serving as a warning that multicopying of a gene has unpredictable effects.

(iii) Gene expression can be changed by what are known as epigenetic effects, where a gene is modified not by changing its sequence via a mutation, but by changing the way it works. Acquired traits are inheritable and passed on to daughter cells by cell division [60], and we have recently learnt, if the new trait is acquired at a particular embryonic stage it can be passed on via the germline [61]. The most common epigenetic effect is DNA methylation or demethylation, a mechanism that uses the methyl molecule to act as a switch suppressing or activating gene expression [60]. Another, more difficult to detect involves changes to regulatory proteins that control cell behaviour. Unforeseeable DNA methylation switching was encountered by German geneticists researching pigmentation in petunias. Genetically engineered to be red, they turned permanently white in a heat wave [62], illustrating how a change in the environment can control the working of a gene.

Each of these three mechanisms for changing behaviour have the capacity to produce allergens and toxins, and alter the nutritional and other qualities of the food. In a case study of the safety of a genetically engineered yeast, designed to produce high levels of enzymes for the speedy breakdown of sugar, the yeast also produced an accumulation of the toxic mutagenic product methyl glyoxal that can damage DNA [63]. In 1989 a Japanese company Showa Denko engineered a bacteria to produce the amino acid Tryptophan in commercial quantities. An associated toxin caused an epidemic of a new disease eosinophilia myalgia syndrome in US where it was marketed as a food supplement. Of 5,000 people possibly affected, 37 died and 1,500 were permanently disabled before the cause was traced. Whether the toxin was a contaminant of the process or produced by the bacteria has never been revealed [64].

4. Every protein encoded by a gene has to be folded correctly. An elaborate system of molecules, themselves also proteins called chaperones supervise the folding of the protein at every stage to ensure it adopts the one and only correct shape that allows it to function [65]. Medical researchers are beginning to suspect that failure of inserted genes to work properly may be due to folding faults in the protein product [56]. Will the plant's chaperone system be able to cope with the alien proteins of modified genes or inserted foreign ones? We already have bitter experience of the effects attributed to one misfolded protein.

5. The biotechnology companies have fought hard to protect themselves against both liability and consumer discrimination by opposing any labelling that would distinguish GMO from non-GMO products. They have shipped out non-segregated soya and maize and declared they cannot and will not be segregated, threatening legal action against any country that bans unlabelled products. (i) This deprives us of the information we need to make a choice, including information the companies may refuse to release on grounds of commercial secrecy. (ii) Without labelling, any adverse reaction in the consumer, in our animals or in the environment is impossible to trace. Nor without knowledge of the source could the damage be stopped.

This policy of protecting themselves from liability was foreshadowed by Montsanto who took US dairy companies to court for telling their customers on the bottle label that their milk was free of rGBH. In response to consumer pressure the FDA were obliged to legalise the label. The EU also, in response to consumer outcry amended Directive 90/220 (18 June 1997) to require that all new products containing GMOs would have to be labelled. This still was not good enough and under further pressure Agriculture Commissioner Fischler announced on 19 September 1997 that it was proposed the amendment would cover the already imported soya and maize, and all products containing or derived from GMOs. Nevertheless should it be considered a barrier to free trade and without scientific justification we could be deprived of these safeguards by the WTO court.

6. The scientific advisers of the regulatory bodies argue that the modified products are safe because they are "substantially equivalent" to the natural product [66,67]. A raw food that carries in its cells viral constructs with the potential for recombination with another virus in its own tissue, or in the insect, bird or animal—including human animal—that consumes it, carries the potential for disease that the natural product does not, and cannot be equivalent. A food from a crop where the engineered gene expresses a protein that changes its nutritional value or confers an allergenic or toxic property, suppresses or activates a regulatory molecule, hormone or enzyme is not equivalent. The methyl glyoxal by-product of the genetically modified yeast, or the lethal toxin produced in the genetic engineering of tryptophan at less that 0.1 per cent of the final product, were at levels too insignificant to fail the safety assessments of the regulators. The misfolded prion was indistinguishable from the normal prion except via its infectivity. The advisory bodies are only looking at the inert structure. They are not looking at behaviour, interactions or function. Nor do they appear to have any inkling that this is necessary.

7. The public are assured that genetic engineering is only a development of plant breeding. Plant breeders shuffle genes to form hybrids within a species. In genetic engineering the gene is usually derived from a totally different species and may be as foreign as a bacteria, fish or animal; together with the various "constructs" required to transfer, activiate or modify the gene. Nature for good reason has not seen fit to make such experiments, just as it did not see fit to make the lethal organochlorines although a handful of plant phytoalexins show it was in its power to do so. Of course parasitic DNA, capable of recombination and horizontal transfer occurs throughout nature in a random way. What we are doing is increasing the rate and probability at which this occurs.

8. For this reason the issue of food safety must also include in the Food Standards Agency remit, the issue of food security, ie security of food supply. GMO technology is being rushed out into the fields in such haste, millions of acres in US are being planted in the case of cereals and legumes, thousands of acres in the case of fruit and vegetables. The seed is sold by a powerful corporation who hold the royalties on it and like Montsanto, are buying up one seed company after another, eliminating farmers' choice and will effectively control world food supply. Here the risks are:

(i) Loss of biodiversity, due to the planting of even fewer varieties than at present where hundreds of thousands were lost in the green revolution. 150 governments meeting in Leipzig June 1996 agreed on a global emergency plan to stem the fall in the diversity of agricultural plants, identified by the FAO as due to "the spread of modern commercial agriculture", and in view of the devastating crop losses in potatoes from new strains of Phytophthera infestans (blight), in maize from the 1970 US leaf blight, in Cuban sugar from cane rust and in Central American bananas from the black sigatoka fungus. But all the talk at the World Food Summit in Rome November 1996 and the Biological Diversity Convention appear powerless to stop the plans of the biotechnology companies for uniform plantings across the globe. Have we forgotten that the Irish famine was due to the fact that their potato was of one variety, and with no resistance to blight—phytophthera infestans?

(ii) Crops genetically engineered to resist pests, parasites and viruses are likely to lose that resistance more rapidly than it is lost to pesticides, because continuous exposure will increase selection pressure and mutations will be accelerated by the scale of planting. The most important biopesticide now in use is the product of a gene from Bacillus thuringiensis, whose Bt toxin attacks insects' digestive tracts. Some 100 strains of the bacteria carry a different Bt gene, encouraging the belief that this reservoir of strains will counteract loss of resistance. Bt genes have been engineered into maize, soya bean, potato, tomato, cotton, tobacco and leafy vegetables. Already the diamondback moth, a major pest of cabbages and other cruciferous plants, has developed a resistance against four strains of Bt via a genetic change in a single gene [68]. Loss of Bt as a biopesticide in a few years is now expected. Monsanto's Bt cotton "Bollguard" failed to prevent a heavy bollworm infestation in Texas 1996, when plants were stressed by an unusual hot dry summer, altering their protein synthesis and producing lower levels of the Bt toxin than normal. Hence the modified gene cannot maintain stability in a changed environment. The crop had to be sprayed to save it. Some scientists are demanding buffer zones of non-GMO crops greater than the present EPA requirement of 4 per cent, to provide reservoirs of non-resistant pests and slow down the spread of resistance. Due to worry over the possibility of crop destruction across America, with its enormous area under maize, the Bt maize has only been given limited authorisation in US until August 2000. By then it may be too late. Organic farmers are particularly hit. For years they have sprayed Bacillus thuringiensis on their crops to avoid the use of chemical pesticides, and will inevitably lose this means of crop protection in US, and also in Europe if crops with the Bt gene are allowed to be planted over here.

(iii) It is planned to harness the mechanisms that plants have developed to protect themselves such as the phenolic and alkaloid poisons and the induced enzymes for strengthening their physical barriers. Should resistance be built up against these it could very well wipe out the natural resistance that plant breeders have depended on, and also increase the range of plants a pest will attack, so that crops and indeed wild plants will be at risk that were never at risk before. The crops of organic and traditional farmers will come under increasing attack.

(iv) The new gene products also affect the insects, birds, and animals that feed upon the plants including the pollenators on which seed production depends. The Scottish Crop Institute at Dundee reported on Farming Today 23 October 1997 that a gene inserted into potatoes to protect them from aphids impaired the fertility of ladybirds, the aphid predator. Rapeseed has been engineered to contain protease inhibitors that interfere with insect digestion. But rapeseed nectar is attactive to bees, and French researchers found that high concentrations of the protease inhibitor in sugar solution shortened their lifespan and interfered with their ability to distinguish colours [70].

(v) The WTO, acting on behalf of the chemical companies demands that import bans cannot be erected unless risks are scientifically proven. The import bans will be taken to include the GMO seeds. The risk of releasing a GMO into the environment can only be proven after the event. It is almost certain to be undetectable in MAFF's small scale trials over a limited period, and in an environment that may be quite different to the one where the crops will be grown. Similar risks apply to the GMO products, contaminants and allergens that may be released into the food chain. The interests of free trade and economic competitiveness are being allowed to override the interests of food safety and food security, forcing us all to become the subject of experiment, blindfold, without safeguards and without our consent.

Genetic engineering is being driven by the profit motive, with the connivance of Governments and politicians who declare it to be safe, seduced by the arguments that the country will reap the economic sweets of employment, export markets and an easy agriculture unplagued by pests and losses and the expenses of pollution. Scientists are dazzled by the technology and the public wooed with the promise of a world of plenty.

But already in this short space of time genetic engineering has produced unpredictable and damaging effects on pest resistance, viral virulence, soil productivity, beneficial insects and the purity of food products. If we adopted it our agriculture would be in the hands of global corporations and farmers totally dependent on them for a restricted seed supply, with further impoverishment of our dwindling crop varieties. Far from solving the problem of world food shortage, uniform crops and the accelearated development of pest resistance put us at risk from catastrophic crop failures, accompanied by rising prices and hunger for the millions that cannot afford to buy.

This is a technology that we do not want, and a moratorium should be put on it. Whatever its field it ought only to be done with meticulous care and caution, without pressure from those whose object is a profitable business, and without inflicting harm on humans, animals or the evironment.

Genetic engineering is in fact not an advance but a hindrance both to science and biotechnology, because (a) with its promise of an immediate solution it diverts attention and funding from the fundamental science that studies nature's processes and (b) its culture of secrecy and the hoarding of patented life forms prevents comminication between scientists and witholds information that might be beneficial and might also warn us of dangerous pitfalls.

A distinction should be made between genetic research and its applications and genetic engineering. In genetic engineering we are forcing a foreign gene for resistance, crop productivity or adaptability into a perfectly running system like a spare body part, instead of using genetics to understand plant-microbial-insect-environment interactions and then finding agronomic ways of stimulating resistance, via nutrition, microbiological induction, epigenetic changes; and ecological ways via rotations, mixed or patchwork planting, conservation areas etc for crop protection.

8. Conclusion

We have neglected the essential role of trace elements and vitamins in human and animal nutrition and the crucial part they play in maintaining health. It is an aspect of food safety we ignore at our peril for without adequate intake we cannot protect ourselves against disease, carcinogens, circulatory failure, disorders of the central nervours system and infertility. So little is this understood that the Government is diverting attention from the real threats to health outlined here by targeting vitamin B6 supplements as dangerous, despite that thousands suffer from B6 deficiency induced by pesticides and the modern diet.

We have polluted the soils, rivers, seas, atmosphere and bodies of all living things with pesticide and chemical residues that cannot be recalled, and in the case of the endocrine disrupters that interfere with reproduction, threaten the very existence of those at the top of the food chain: the birds, mammals and ourselves.

We have cast aside all the tenets of good husbandry for maintaining soil fertility, transforming noxious wastes and doing our animals well; instead of relying on crude technologies that induce soil erosion, require high chemical inputs for crop survival and drug inputs to maintain intensive systems of livestock rearing.

Intensive systems make enormous demands for grain that divert land use from feeding the growing world population and displacing those who were formerly self-sufficient. They abuse living creatures, create pollution and divide the world into "haves" and "havenots".

We have overused the antibiotics that kept epidemics at bay and ensured the good health of countless individuals. And amidst our plenty and despite our medical expertise we have created diseases and disorders that stem from mishandling of the science and technology that ought to serve us.

We are not gloomy people. We are farmers. Some of us are scientists. We think our political strategy and scientific research should be directed towards sustainable agriculture and as far as possible, local food production. Specifically this means:

(i) Organic Farming. This is the only system of modern farming that is safe, benign, non-polluting and productive, based on farmer observation and experience and developed via scientific insight and experiment. Research, publicly funded should be directed at an understanding of the biochemical and ecological interdependence of animal, plant, microflora, soil and atmosphere in order to raise productivity; and of the mechanisms of resistance conferred by mineral nutrition, biodiversity, rotations, composting, wildlife; and of safe storage conditions to avoid wasteful losses. We must kill the myth that organic farming is synonymous with low productivity. The abundance of nature is produced from low inputs and we should emulate, not disrupt it. The conversion to organic farming need be neither slow nor costly if we adopt the simple expedient of first restoring trace elements to our depleted soils, thereby activating the microorganisms, stimulating crop and pasture output and improving livestock health and performance without the props of high inputs, as hundreds of farmers—most of them conventional—will testify [1].

(ii) Local production provides a direct link between producer and consumer so that they and their children know where their food comes from. It ensures a range of businesses and employment to support the economy of the surrounding area. It reduces transport costs and the costs of transport. It entails a reorganisation of the livestock and meat industry, with a reduction in our dependence on the centralised abattoir, the restoration of the local abattoir and development of the mobile abattoir to replace the collapsed knacker system; the removal of the monopoly situation in the rendering industry and it decentralisation, with chemical and microbiological expertise directed at sensible solutions for by-product recovery and solving the difficult problems of waste disposal and recycling. This should include the proper treatment of slurries and sludges via composting and microbiological degradation on the farm and at the sewage plant.

(iii) Support of the family farm, small holding and allotment with opportunities for new entrants into food production.

(iv) High standards of animal welfare.

(v) Our agricultural and horticultural produce will be sought by customers in the home and export markets because they know it can be trusted for its safety, nutritional value, benign production and freedom from manipulation. Its low input costs and high yields will ensure it is competitively priced.

(vi) The power of the WTO to prevent a country from protecting its people's health, environment and livelihood must be brought to an end.

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28 October 1997

APPENDIX 46

Memorandum submitted by the Association of Meat Inspectors (C65)

FOOD SAFETY INQUIRY

Thank you for inviting comments from my Association and for extending the deadline to 4 November.

The Association represents Meat Hygiene Inspectors, mainly employed by the Meat Hygiene Service (MHS), which is an Agency of MAFF. As you will know, the MHS took over responsibility for meat hygiene from Local Authorities in April 1995. We have around 1,200 members.

We have recently experienced in the UK, with BSE and E coli, the results of disregarding hygiene and inspection standards at the abattoir. The resultant disastrous effect on human health and the long term effects for the industry are clear for all to see, but already we, as Inspectors, are aware of the industries renewed efforts to obtain self regulation in order to reduce the cost of hygiene—despite the previous results.

In order to obtain self regulation, a number of initiatives have been proposed in order to give the appearance of improvements in public protection. Some of the proposals are;

HACCP; The slaughter industry depends on volume of production, for profit. The dangers to public health occur at critical control points, eg contamination transferred from the hide or fleece; spillage from the alimentary tract etc are well known and are seen daily by MHS inspectors, but because of the weakness of the MHS enforcement system, coupled with the lack of desire to prosecute offenders, the food safety risk to the consumer remains.

Food safety cannot be allowed to become the province of an industry that sees hygiene as an unnecessary expense—and self regulation as a way to a more profitable business.

Industry Responsible for its Products; The new European "Green Book" on food safety is pressing for self regulation by seeking a lower level of inspection by taking account of its "own checks". We agree that the industry should take responsibility for its products, but experience (such as BSE and E Coli) have showed that an independent inspection service should not only be retained, but strengthened. The performance of the MHS shows that this should be particularly applicable in the UK.

Risk Based Levels of Supervision; HAS scores in abattoirs can easily be manipulated. It is in the interest of the (independent?) OVS to ensure that the HAS score gets to above the required 65 per cent level. Many of the scores have been crticised by the SVS as too optimistic—and this (SVS) inspection takes place after a "clean up" for the visit. The system of appointing the non MHS employee OVS needs to be changed—the industry should have no say in this appointment. The Government was moving towards a risk based system prior to the BSE/CJD link and the failure of the industry to take responsible action to ensure that SBM controls were adhered to, together with the, even now, pathetic attempts to stop contaminated meat reaching the food chain, must ensure that inspection remains an independent service.

The MHS since its creation tried to provide, what the Industry perceived to be in its commercial interest. The Industry had, and still has, far too much influence over the MHS.

Immediately after its creation the MHS set up Hygiene Advice Teams (HAT) which inspected every abattoir in the UK. Despite this costly exercise and the problems reported by them, no significant effort was made to remedy the problems. Indeed the only significant outcome was the reduction of inspection hours. It is our opinion that the function of this exercise was in fact to reduce the costs of inspection to the Industry—as had already been promised.

The EU inspectorate visited abattoirs in the UK in 1995 (August) and found a low level of compliance with SBO legislation. The same inspectorate found a low level of compliance a year later in hygiene standards. In September 1995 the SVS found 50 per cent failing to comply, despite the HAT visit a few weeks before. It is hard to see what difference a HACCP system administered by the industry would have made.

In order to comply with SBM and hygiene regulations following the banning of exports of beef in March 1996, it was suddenly necessary to nearly double the inspection workforce to comply with regulations that had been in force for many years.

The first priority of the MHS must be the protection of the public. Food Safety Minister, Jeff Rooker has stated similar sentiments, but the Association already has evidence that the MHS's previous policy of enforcement by "the lightest touch possible" remains in place Inspectors are being sacked for failing to spot contamination, while the offenders—the people responsible for presenting contaminated meat for inspection, are ignored. Meat is still being presented on a daily basis with SBM failures and contamination—without enforcement action from the MHS.

Finance; The Association has reason to believe that charges for inspection and hygiene are being kept artificially low, because of the monies available to the MHS from Government funds and EU subsidies that were for use to ensure that SBM controls were put in place. Our main concern is that when this money eventually dries up and the Industry have to meet the true cost, standards will drop dramatically to ensure that the trade remains "competitive".

Finally, we will be happy to meet with your committee and enlarge on our comments, or answer any questions put to us. Thank you again for inviting our comments.

1 November 1997

APPENDIX 47

Memorandum sumbitted by the Scottish Consumers Association for Natural Food (C66)

The Scottish Consumers Assocation for Natural Food represents over 1,500 concerned consumers in the Glasgow area who are quite clear that the genetic manipulatiion of their food is both hazardous and undersirable.

Current, accumulating scientific evidence is repeatedly revealing unexpected and inexplicable characteristics in all gene-manipulated organisms. In spite of this, our entire population is now being increasingly exposed to food derived from gene-altered sources. It is only a matter of time before we sustain irreversible damage to health, and to the stability of the environment upon which we depend for our food.

Assessments of the safety of gene-manipulated foods, for example by the ACNFP, are based on an "acceptable level of risk". How many people will be allowed to die or become disabled, or even be born disabled, before the risk becomes unacceptable? The foods we are talking about are now in almost every item on our supermarket shelves and it is impossible to avoid them: adverse consequences will affect everyone. In these circumstances, there can be *no* acceptable level of risk in food.

The safety of any food altered grossly and imprecisely at its most fundamental level cannot be established in less than 30 years. Safety testing to date has been superficial, short-term and incomplete, while all evidence of hazardous consequences has been dismissed. It is imperative that the biotechnology industry and the government stop pretending that they know what they are doing and remove all gene-manipulated organisms from our food chain.

29 October 1997

APPENDIX 48

Memorandum submitted by the Advisory Committee on Pesticides (C68)

INTRODUCTION

1. The Advisory Committee on Pesticides (ACP) has a key role in the rigorous system for approving the sale and use of pesticides in the UK. The purpose of this evidence is to outline the arrangements that are in place and the ACP's role in them.

THE PURPOSE OF PESTICIDES CONTROL

2. The UK pesticides approvals system covers products for use by professionals and by the general public. The system is founded on the Food and Environment Protection Act 1985 and from this is derived the principal aim of the system, which is to protect the health of human beings, creatures and plants and to safeguard the environment. EC rules, having similar objectives and setting similar standards, will eventually replace domestic arrangements, but this process will take a number of years.

3. The approvals arrangements provide that no pesticide may be sold or used unless this has been approved by Ministers. The system is an integrated one which covers not only food safety but also the safety of pesticide users and bystanders, the protection of the environment and the efficacy of the product (in other words that its use carries benefits). All of these issues are carefully considered when evaluating or reviewing a pesticide approval; an integrated assessment is essential in this process.

Responsibilities for Pesticides Control

4. Decisions on the approval of pesticides in Great Britain are taken by Ministers in the Ministry of Agriculture, Fisheries and Food, the Department of Health, the Department of the Environment, Transport and the Regions and Scottish and Welsh Offices; each Department has a power of veto on decisions. Decisions for Northern Ireland are taken by the Northern Ireland Office. Ministers are advised by the ACP. The approvals system is administered by the Pesticides Safety Directorate (PSD) for agricultural pesticides and by the Health and Safety Executive (HSE) for other pesticides.

The Structure and Remit of the ACP

5. The ACP is a statutory body set up by Ministers under section 16(7) of the Food and Environment Protection Act 1985 (FEPA) to advise on matters relating to the control of pesticides. Members are selected for their expertise in fields, including medicine and the environment, which are of importance to the work of the Committee. Membership is approved jointly by the Ministers in the regulatory Departments and is kept under review to ensure that the Committee continues to be able to discharge its role effectively. Ministers are presently considering the appointments of lay members to the ACP.

6. The ACP examines all major pesticides issues including the first approval of all new pesticide chemicals and the review of existing ones. The Committee also sets the framework for the more routine work carried out by PSD and HSE in the day to day operation of the approvals system.

Independence of ACP Members

7. On appointment to the ACP each member signs a declaration that they have no financial or commercial interest which might prejudice the proper discharge of their functions as a member of the Committee and that if they should acquire any such interest during their membership, they will inform the Minister of Agriculture, Fisheries and Food. This declaration prevents the appointment of members whose opinions might be swayed—or appear to be—by commercial interests.

8. It is, however, recognised that those with the depth of relevant expertise needed to contribute effectively to the work of the ACP are likely to have had some contacts with industry. ACP Members are required to declare any interests (for example the receipt of funding from the pesticides industry for an element of their research work or that of their organisation). These declarations must be made annually for publication and at ACP meetings where issues related to these interests arise. The Chairman will exclude those with personal interests from the Committee's discussion.

The Operation of the Approvals System

9. Under the Control of Pesticides Regulations 1986, the advertisement, sale, supply, storage or use of any pesticide is prohibited unless Ministers have approved that pesticide and consented to that activity. In addition, maximum levels of pesticide residues in various crops and food products are specified in the Pesticides (Maximum Residue Levels in Crops, Food and Feeding Stuffs) Regulations 1994 (as amended).

10. Applicants for pesticide approval must provide detailed scientific data on human and environmental safety, covering issues such as toxicity, operator exposure, residues, pesticide chemistry, environmental fate and behaviour, ecotoxicology and efficacy. PSD or HSE evaluate these data and determine the product's potential to cause harm (hazard) and the likelihood that this potential might be realised through exposure (risk). The ACP critically assesses the evaluations made as one factor in considering its recommendations to Ministers on particular chemicals or products.

11. The outputs of the evaluations are generally expressed in terms of risk ratios and the ACP uses expert scientific judgement to take a view about likely risks to human health. This is a general method of risk assessment in food safety and the ACP has considerable understanding of these procedures. However, it is increasingly recognised that significant variability can occur both in terms of effect (influenced by the age, gender and health of those affected) and exposure (unit to unit variation), that have important implications for assessment of risk from food contamination. PSD is developing simulation techniques to address such problems more effectively, but the development and use of such techniques will require continuing attention.

12. When using a pesticide certain general obligations and specific conditions have to be met. The specific conditions are statutory conditions of approval which are imposed on individual pesticide products to minimise the risk from using them. The general obligations relate to the sale, supply, use, storage and advertisement of pesticides. These comprehensive controls are based on the best scientific advice and on

information obtained from surveillance of residues in food, usage surveys and wildlife poisoning and other incident reports. The data in these reports are all carefully considered to ensure that safeguards are fine-tuned in the light of the experience of a pesticide in use.

13. The regulatory authorities are heavily involved in the monitoring and enforcement of pesticides legislation. In particular, residue levels in crops and food products are monitored under the direction of the Working Party on Pesticides Residues, which reports to the ACP. Monitoring results are published annually and show that only about one per cent of samples exceed so-called Maximum Residue Levels (MRLs). MRLs are not safety limits but monitoring against them allows misuse of pesticides to be picked up; such cases are therefore followed up and enforcement action taken where necessary. Levels of usage of pesticides are also monitored.

14. The public is provided with substantial access to information on pesticides. The Advisory Committee on Pesticides and the Working Party on Pesticides Residues both publish comprehensive Annual Reports. All of the ACP's detailed scientific evaluations are made available to the public and there are also arrangements for members of the public to inspect the underlying data provided by companies on which the evaluation is based.

Food Safety

15. The ACP is aware of public concerns in the area of food safety, it has dealt with them for many years in terms of pesticide usage and with regard to the presence of residues in food. This awareness identifies the real problem of food related illness as a microbiological rather than a chemical one—the proposed Food Standards Agency will need to concentrate on safe food preparation and handling (and may help to promote a public understanding of the real levels of food safety risk and of the benefits of the controlled and appropriate use of agrochemicals).

16. The ACP also believes that it is important that any new arrangements ensure that all risks, not only those relating to food safety, continue to be weighed when regulating pesticides. It is important to ensure that risks to pesticide users and bystanders, to non-food animals, including fish and beneficial insects, and to the environment are not forgotten.

4 November 1997

APPENDIX 49

Memorandum submitted by Monsanto plc (C69)

I would like to submit some comments on "food safety implications of the presence of genetically-modified organisms in the food chain" to the Select Committee's enquiry into Food Safety.

By way of background information, Monsanto Company has been directly involved in the agricultural industry for almost a century, and over the last two decades, in the development of crops improved through modern biotechnology, including Roundup Ready (herbicide tolerant) crops.

Monsanto's expertise in this area includes molecular biology, crop transformation, field research and development, regulatory science (safety assesments), agronomy and commercial use.

Biotechnology and GM Foods

Modern biotechnology or genetic modification has been recognised for the important benefits it has brought about in health care through developments in the pharmaceutical industry but less well known is its potential to improve the quality and variety of our food, as well as increased crop yield.

Among the benefits likely to come from genetically modified crops are the following:

Higher Protein Foods

Lack of protein is a major cause of malnutrition in many countries of the world. Biotechnology could be used to produce palatable high protein crops.

Modified Fat Foods

Corn, soyabeans, oil seed rape and other crops could be modified to alter their saturated fat content.

Higher Vitamin Fruit and Veg

Some fruit and vegetables could be adapted to contain higher levels of nutrients, for example, vitamin C and E.

Longer Lasting Fruit and Veg

Genetic modification to slow down softening will provide fruits that last longer. Processed tomatoes with this characteristic are already on sale in the UK. Slow softening apples, raspberries and melons have also been produced and this benefit is likely to be transferable to other fruit and vegetable crops including bananas, pineapples, sweet peppers, peaches, nectarines, mangoes and strawberries. The benefits include both avoidance of waste and an improved quality of the end product.

Soya Beans

Soya beans are one of the major sources of protein in world agriculture, having a protein content of around 40 per cent. Food ingredients derived from the soya bean are now found in 60 per cent of all manufactured food in the UK.

Roundup Ready Soya beans developed by Monsanto have shown how significant herbicide reduction can be combined with higher yields and environmental gains. In 1996 Roundup Ready soya beans were grown on approximately 400,000 hectares in the US and the average of total herbicide reduction, depending on climate and weeds in the region, varied from 9 per cent in East Central US to 39 per cent in South East US.

Monsanto have commercialised and are currently developing other crops with built-in pest and disease protection:

- Insect-protected maize and cotton;
- Insect and virus-protected potatoes; and
- Virus-protected tomatoes.

Using current and future developments in modern biotechnology, these crops like the soya beans, will allow us to produce more food, using less land, whilst improving our environment.

Safety

Opponents of genetic modification argue that we do not know enough about the science and that altering genes could lead to unforeseen problems for future generations. Against that scientists would argue that since only the specific genes for a trait are identified and introduced into foods, the technology is far more precise than the trial and error approach of traditional plant breeding and animal breeding.

Also very strict controls do exist and as we have said in our response to the MAFF discussion paper on *Weed Control on the Farm: Management of Genetically Modified Herbicide Tolerant Crops* the regulatory burden for the commercial introduction of a genetically modified herbicide tolerant variety is considerably greater than that for any other crop variety.

In the UK, the Food Safety Act requires that all food must be fit for consumption, ie, must not be injurious to health, be unfit or contaminated. An additional set of safeguards controls the use of genetic modification in foods or food ingredients. These foods are assessed by a number of committees of independent experts, some of which include consumer representatives:

- The Advisory Committee on Novel Foods and Processes (ACNFP);
- The Committee on Toxicity of Chemicals in Food, Consumer Products and the Environment (COT);
- The Food Advisory Committee (FAC); and
- Advisory Committee on Releases in the Environment (ACRE).

On 27 January 1997 the EU Novel Foods Regulation was adopted, after four and a half year's discussion. This harmonises procedures for the approval of all novel foods, including those using modern biotechnology, as well as defining the requirement for product labelling. It came into force on 15 May 1997.

As far as crops are concerned there are Plant Protection Products Regulations 1995 in the UK and Control of Pesticides Regulations 1986 in addition to the Genetically Modified Organisms (Deliberate Release) Regulations 1992 and 1995, which relate specifically to genetically modified plants, ensuring the protection of the environment and human health.

In June 1997, the European Commission adopted an amendment to Directive 90/220 obliging European Union manufacturers and distributors to label their genetically modified organisms (GMOs) or products containing GMOs. The European Biotechnology Association has supported this amendment.

Labelling of GM Foods

Monsanto is in favour of the fullest possible information being made available to consumers on GM foods and for that reason has established the Plant Biotechnology Information Centre and we are participating actively in the FDF Foodfuture programme. We also support clear positive labelling on products where there is a scientifically verifiable compositional difference.

I hope this information will be helpful to the Committee's inquiry. We would be happy to provide more details on any aspects of GM foods if you require them or give oral evidence to the Committee if it would be helpful.

10 November 1997

APPENDIX 50

Memorandum submitted by the Soil Association (C70)

Herewith my submission to the Agriculture Committee on the above subject which consists of an article covering most of the issues about which the Soil Association is concerned in relation to the formation of the proposed FSA. These can be summarised as follows:

1. Although we support the principle of the establishment of a Food Standards Agency and are highly critical of some aspects of the historic performance of MAFF, we believe that there are some structural flaws in the proposed agency in its present form which, if not corrected, could impede the development of sustainable solutions to current food safety and quality problems.

2. The reasons cited by Professor James and others for the creation of the Food Standards Agency (public concern about pesticides, bacterial contamination, nutritional quality and genetic engineering) are all problems which are directly or indirectly related to intensive farming practices.

3. The presumption that seems to lie behind the proposals for the design of the FSA is that additional scrutiny and policing by an independent body will overcome these problems

4. Improved policing is all very well in the short term, but unless the structural and husbandry-related issues which are directly or indirectly linked to most of the recent food safety and health problems in the food industry are addressed, the present run of food quality and safety breakdowns will continue. In these circumstances the new Food Standards Agency will have plenty of work to do!

To overcome these problems, we offer the following recommendations:

- In the terms of reference for the FSA, explicit recognition of the links between agricultural practice and food safety and recognition of the importance of addressing this issue through changes in farming methods.
- The structure of the FSA to include committees with a specific brief of working with MAFF on the development of more sustainable agricultural practices.
- Clear structural links with MAFF (in whatever form it is retained) to ensure the avoidance of polarisation between ministries (as has sometimes been the case with MAFF and the DoE) which can easily occur despite overlapping and mutual concerns. In this respect the FSA should build on the example set by the DETR.
- As an example of one such linkage, the United Kingdom Register of Organic Food Standards (UKROFS) should be retained within MAFF but close links should be forged between UKROFS and the new Food Standards Agency in order to strengthen the relationship between consumer and producer interests.

20 November 1997

APPENDIX 51

Memorandum submitted by Dr Erik Millstone, Science Policy Research Unit, Sussex University (C71)

CONTEXT

It is now acknowledged on all sides that the long series of scares and crises concerning food safety that have arisen in the UK since the mid-1980s have been sufficiently serious to make a process of reform unavoidable. The government is proposing, in the first place, to reform food safety policy-making institutions, especially the Ministry of Agriculture, Fisheries and Food (MAFF). The likely changes may be expected to result in substantive policy changes concerning both regulations and patterns of enforcement.

There remains a debate, however, over the extent to which those crises have been real or imaginary, substantial or spurious. This memo is predicated on the premise that many of them have been based on genuine scientific evidence and well-grounded concerns about food safety. In some cases the available evidence has indicated a specific real hazard while in other cases the evidence has indicated that safety could not prudently be presumed.

There remains, for example, scope for debate as to whether or not the use of Alar on apples posed a hazard to consumer health, but the hazards arising from *EColi* 0157, and BSE-contaminated meat are uncontested and perhaps incontestable. Some sections of the food industry however continue to articulate the view that the food supply has always been and remains entirely, or at any rate acceptably, safe. That is, however, a serious misrepresentation. The challenge for the Food Safety Agency and the Department of Health will not merely be a public relations exercise to restore public confidence but a more substantial exercise to raise standards of food quality and safety and thereby to restore public confidence.

DIAGNOSIS

The shortcomings of the current MAFF-run system are legion but, to a first approximation, they can be summarised under four main headings:

1. MAFF has failed to set proper food-safety consumer-protection standards.
2. MAFF has failed to ensure that the standards which have been set have been properly enforced.
3. MAFF has failed to invest sufficient resources in food-safety research, nor to use wisely those resources which have been invested. Consequently many of the most important policy-sensitive scientific uncertainties continue to weaken the scientific basis of policy-making, and too little has been done to improve methods for ensuring the safety of the food supply or for keeping food safe.
4. MAFF has failed to communicate effectively with the general public on issues of food-borne risks. MAFF has repeatedly oversimplified complex issues, in part by pretending to possess far more scientific certainty than was genuinely available, and pretending to higher levels of confidence than could legitimately be claimed. This failure has been closely connected with MAFF's habit of concealing the extent and significance of scientific uncertainties and conflicts of interest. These two factors interact because when policy-makers are confronted by scientific uncertainties they need to decide whether to award the benefit of the doubt to consumer protection or to commercial promotion. By concealing the uncertainties, and by trying to pretend that the sponsorship of industry and commerce is always consistent with consumer protection, MAFF have struggled to persuade the public to accept an unconvincing set of messages.

This set of failures has arisen as a direct inevitable consequence of the fact that MAFF has a contradictory set of policy objectives. MAFF is supposed simultaneously to protect consumers and to promote the commercial interests of the agricultural and food industries. When those two policy objectives have come into conflict MAFF has repeatedly subordinated consumer protection to commercial and industrial sponsorship. As a consequence, the food supply in the UK is less safe than the British public demands and expects, and legitimate public concerns have consequently inflicted serious damage on the commercial interests of the food industry too. In short, because MAFF has tried simultaneously to satisfy two incompatible objectives the department has failed to attain either objective and damaged both sets of interests.

REMEDY

The new arrangements which Professor James has proposed, with a Food Standards Agency and a transfer of regulatory responsibility from MAFF to the Department of Health, are designed to address precisely this problem. The James proposals envisage a thorough-going institutional separation between the responsibility for industrial sponsorship, which will remain with MAFF, and the responsibility for regulating the food supply trades (in respect of standards of safety and quality), which should become the responsibility of the Department of Health (DoH) acting on the advice of the Food Standards Agency (FSA). Professor James envisages, in particular, that the FSA and the DoH will act in a fully open and accountable manner, so that the complete institutional separation of regulation from sponsorship should then be clearly evident. Instead of having a department (such as MAFF) with a contradictory set of obligations within which regulation all too often is subordinated to sponsorship, the two responsibilities should become entirely separate. Under those conditions a sponsorship role will remain, but it will take place with a regulatory regime that is established without reference to any sponsorship considerations.

Under the current arrangements, considerations of industrial and commercial sponsorship have exerted their influence over regulatory policy-making through several routes. Firstly they have operated through direct Minsterial guindace to civil servants; and through the membership and operation of expert advisory committees. It might therefore be appropriate for the Select Committee to inquire precisely which instruction ministers in MAFF and the DoH have given to the Joint Food Safety and Standards Group, and how that guidance differs from that which was provided prior to the publication of the James report.

It would also be appropriate for the Select Committee to investigate in some detail the ways in which links between members of expert advisory committees and commercial and industrial organisations with which they are linked may be influencing the advice of those committees.

Members of MAFF and DoH food-related expert advisory committees are permitted to act as paid consultants to the companies whose products they are asked to evaluate, and many of them do so. The current rules on declaration of interests are inadequate, in part, because so-called "non-personal interests" frequently fail to specify the names of the companies involved. For example, in the 1996 Annual Report of the Food Advisory Committee the chairman, Professor Sir Colin Campbell, simply refers to a "wide range of national and international food companies" and even when companies are identified, the scale of the commercial involvement is not disclosed. It might be very important if an expert received £100 annually or £100,000.

Despite some suggestions from industry to the contrary, there is sufficient expertise in the UK to staff the relevant expert committees with experts who are not commercially or industrially compromised.

The details of the ways in which the various committees operate might also be well worth investigating by the Select Committee. Evidence suggests that there are considerable variations in practice, but within the last 12 months former members of the Advisory Committee on Pesticides (ACP) and the Veterinary Products Committee (VPC) have reported to me that the custom on the ACP and the VPC has been that the members of those committees arrive for a meeting to be confronted not just by the detailed papers by reference to which their decisions should be taken, but also by a set of draft minutes which specify, in advance of their deliberations, the decisions which the secretariats propose the committees should reach. My sources have also indicated that they were under the distinct impression that the committees' secretariats had sometimes negotiated those draft decisions in advance with the companies concerned, and done so in the light of guidance from ministers.

I have recently had an exchange of correspondence with a senior MAFF official in which he has denied that this has happened, however my sources repeatedly indicate that I have correctly represented their experiences. A former MAFF Chief Scientist recently indicated that MAFF's attitude to its expert advisory committees always was "we are helping them with their inquiries", by which he meant that the secretariats sought to prevail upon the committee membership to endorse decisions which had, in effect, been taken by departmental officials acting under ministerial guidance. The Select Committee might be uniquely well-placed to investigate the veracity of these competing claims.

One important factor which helps to explain the fact that the expert advisory committees have often reached decisions favourable to commercial interests and to the detriment of consumers has been that in too many cases the committees have not been provided with all of the available relevant scientific evidence. Examples where this has occurred have included the ethylene bisdithiocarbamate fungicides (such as maneb, zineb and mancozeb) and their decomposition product ethylenethiourea, organophosphate insecticides and the artificial sweetener aspartame.

To illustrate this point, I am attaching to this memo two tables. They list firstly the positive and then the negative studies on the genotoxicity of mancozeb. They show in particular which studies were taken into account, and those which were ignored, by the US Environmental Protection Agency (EPA) and by MAFF. They show, in particular, that MAFF omitted numerous studies which provide evidence that mancozeb can exert a genotoxic effect, and that MAFF included a far fuller list of those which failed to provide such evidence. These tables were prepared by Dr Patrick van Zwanenberg, and were included in his PhD thesis *Science, Pesticide Policy and Public Health* (Sussex University, 1995). The pattern exhibited in these tables can be found in numerous other cases too. The Select Committee might be well placed to investigate how and why this biased selection of the scientific evidence has been occurring.

Decisions which have unduly favoured commercial rather than consumer interests have also been reached because expert advisory committees, when interpreting those data which were reviewed, have often applied biased criteria. A detailed scrutiny of the available documentation indicates that the results of studies which fail to indicate any hazard are typically taken at face value, without any reference to the design or conduct of the studies, while apparently positive findings of toxicity are frequently discounted by reference to some supposed shortcoming with the design or conduct of the study concerned. An approach which prudently sought to protect public health would at the very least draw attention to the strengths and weaknesses of all studies, and perhaps might go further and focus especially closely on the possible shortcomings of the apparently favourable studies. In practice the opposite pattern can frequently be discerned. This too might be a suitable topic for the Select Committee to examine in some detail.

Possible Pitfalls

When the James report was published it provided suggestions for a suitably reformed institutional structure which should be able to diminish the extent and the severity of the problems outlined above, and perhaps might even lead to their elimination. More recently, however, there has been some evidence that the forthcoming White Paper may contain proposals which could fall significantly short of the framework Professor James envisaged. In recent weeks we have been told that the FSA will be empowered to advise on food standards and food safety along the entire food chain, but it is being suggested that responsibility for the regulation of agriculture will remain with MAFF, while transferring to the DoH responsibility for setting regulations only on foods once they have crossed the farm gate. This would fall seriously short of the arrangements proposed by Professor James.

A key issue therefore will be the extent of the remit of the Department of Health and the FSA. Will the Department of Health, acting on the advice of the FSA, have regulatory responsibility for the entire food chain, inluding the agricultural supply industry, or will it rather be "from the field to the plate", or merely "from the farm gate to the plate"? For all the reasons which Professor James set out, the first option would be the most appropriate.

The existence and scale of many of the most important food safety problems, such as BSE, *EColi* 0157 and *salmonella,* have arisen because of the decisions and actions of the agricultural supply industries and farmers.

The FSA and DoH will be seriously handicapped unless their joint remit covers the entire food chain, not just from the plough to plate, but including the agricultural supply industries too.

The notion that BSE or *EColi* 0157 could be eradicated from the food supply by an Agency or department which had no responsibility for regulating farming or animal foodstuffs, or where responsibility for the food chain was divided between two different departments of state is entirely unconvincing. The comprehensive intergration which Professor James recommended will be vital for both practical and political reasons, and any arrangements which contradicted that principle would be taking undue and ill-advised risks. Responsibility for setting regulations concerned with all matters of food-related consumer protection and public health should, therefore, be assigned to the DoH, acting on the advice of the Agency. If MAFF retains responsibility for regulating farming and the agricultural supply trades, the contradiction between consumer protection and industrial sponsorship will continue its malign influence.

SUMMARY

In summary, if the Select Committee was able to lift the lid on the ways in which MAFF has subordinated regulatory policy to the perceived commercial interests of its client sectors to the detriment of consumers, it will provide a substantial service to food safety policy. If the Select Committee recommends that Professor James' proposals should be implemented fully and unambiguously it will make a valuable contribution to improving the quality of the food supply in the UK, and will thereby contribute to restoring public confidence in the quality of the food, in the industry which supplies that food, and also in the probity of the policy-making process.

9 November 1997

INCLUSION OR OMISSION BY EPA AND MAFF OF POSITIVE MANCOZEB GENOTOXICITY STUDIES

Mancozeb Studies Reported as Positive		*EPA*	*MAFF*
A. *Publications (English language):*			
Chromosomal aberrations / Human lymphocytes	Georgian *et al* 1983	Included	Omitted
Bone Marrow Cytogenetics / Wistar rat	Georgian *et al* 1983	Included	Omitted
Point mutation induction / *Aspergillus nidulans*	Martinez-Rossi & Azevedo 1987	Included	Omitted
UDS / Human lymphocytes	Perocco *et al* 1989	Included	Omitted
Chromosomal aberrations / *Allium cepa* peduncles	Mann 1977	Omitted	Omitted
Chromosomal aberrations & SCE / Humans	Jablonicka 1989	Included	Included
B. *Publications (foreign language):*			
Chromosomal aberrations / Hordeum vulgare	Murty *et al* 1983	Omitted	Omitted
Chromosomal aberrations / *Allium cepa* root tips	Badr 1988	Omitted	Omitted
Bone marrow cytogenetics / Mouse	Kurinnyi *et al* 1982	Included	Omitted
Impaired fertility / Rats	Vergieva 1984	Included	Omitted
C. *Abstracts:*			
Gene Conversion / *S. cervisiae*	Warren *et al* 1976	Included	Omitted
Lymphocyte cytogenetics / Wistar rat	Newton 1977	Included	Omitted
D. *Unpublished Studies:*			
Induction of mitotic recombiunation / *S. cerevisiae*	Simmon *et al* 1979, EPA	Included	ref cited[a]
Unscheduled DNA Synthesis/Human fibroblasts	Simmon *et al* 1979, EPA	Included	ref. cited[a]
Sister chromatid exchange / CHO cells	Ivett 1985, Rohm & Haas	Included	Included
DNA damage / *E. coli*	Jones *et al* 1986, Pennwalt	Included	Omitted
Chromosomal aberrations / CHO cells	Allen *et al* 1986, Pennwalt	Included	Omitted

[a]: "ref cited" indicates that the study was cited (but not openly evaluated) in MAFF's disclosure document in a list of references that were not considered to add anything substantive to the review.

Sources:

ACP, *Position Document On Consumer Risk Arising From The Use Of Ethylene Bisdithiocarbamates,* Advisory Committee on Pesticides Evaluation No. 16 (January 1990), Ministry of Agriculture, Fisheries and Food, London.

Dearfield, KL, *Comments on the Mutagenicity of EBDCs Based on Available Studies,* Memorandum to Albin Kocialski, EPA 24/9/89, Health Effects Division, Office of Pesticide Programs, US EPA, Washington, DC Mauer, I, *Mancozeb—Review of Mutagenicity Data Submitted on Mancozeb and ETU in Response to Data Call-In Notice of January 17, 1983—ID No 707-78, Accession No 259044.* Memorandum to Arvella Farmer & Henry Jacoby, EPA 30/4/86, Hazard Evaluation Division, Office of Pesticide Programs, US EPA, Washington, DC.

Mauer, I, *Mancozeb—Mutagenicity Studies Submitted Under MRID Nos 40810201 to 40810205 and 40778901 EPA ID No 4581-358,* Memorandum to Lois Rossi/Susan Lewis, EPA 9/1/89. Health Effects Division, Office of Pesticide Programs, US EPA. Washington, DC.

INCLUSION OR OMISSION BY EPA AND MAFF OF NEGATIVE MANCOZEB GENOTOXICITY STUDIES

Mancozeb Studies Reported as Negative		*EPA*	*MAFF*
A. *Publications (English language):*			
Gene mutation / *Salmonella*	DeLorenzo *et al* 1978	Included	Omitted
Sex-linked recessive lethal aasay / *Drosophila*	Vasudev & Krishnamurthy 1980	Included	ref cited[a]
Autosomal recessive lethals / *Drosophila*	Vasudev & Krishnamurthy 1980	Included	ref cited[a]
Gene mutation / *Salmonella*	Moriya *et al* 1983	Included	Included
Reverse mutation / *E. coli*	Moriya *et al* 1983	Included	Included
B. *Unpublished Studies*			
Gene mutation / *Salmonella*	Simmon *et al* 1979, EPA	Included	ref cited[a]
Gene mutation / *E. coli*	Simmon *et al* 1979, EPA	Included	ref cited[a]
Relative toxicity / *E. coli*	Simmon *et al* 1979, EPA	Included	ref cited[a]
Relative toxicity / *B. subtilis*	Simmon *et al* 1979, EPA	Included	ref cited[a]
Cell transformation / C3H/10/ 1/2 cells	McGlynnKreft 1984, Rohm & Haas	Included	Included
Bone marrow cytogenetics / Fischer 344 rat	Sames 1984, Rohm & Haas	Included	Included
Mouse host mediated assay	McCarroll 1984, Rohm & Haas	Included	Included
Mouse host mediated assay	McCarroll 1985, Rohm & Haas	Included	Included
Gene mutation / *Salmonella*	Chism 1984a, Rohm & Haas	Included	Included
Gene mutation / Chinese hamster ovary/hprt	Byers 1985, Rohm & Haas	Included	Included
Unscheduled DNA synthesis / Rat hepatocytes	Byers 1985, Rohm & Haas	Included	Included
Unscheduled DNA synthesis / Rat hepatocytes	O'Neill 1988, Rohm & Haas	Included	Included
Cell transformation with promotion / 10T 1/2 cells	Mcleod 1985, Rohm & Haas	Included	Included
Unscheduled DNA Synthesis/HeLa cells	Allen 1986, Pennwalt	Included	Omitted
Mouse micronucleus	Allen *et al* 1987, Pennwalt	Included	Omitted
Unscheduled DNA synthesis / Rat hepatocytes		Included	Omitted
Cell transformation with promotion / 10T 1/2 cells		Included	Omitted

[a]: "ref cited" indicates that the study was cited (but not openly evaluated) in MAFF's disclosure document in a list of references that were not considered to add anything substantive to the review.

SOURCES

ACP, *Position Document On Consumer Risk Arising From The Use Of Ethylene Bisdithiocarbamates,* Advisory Committee on Pesticides Evaluation No 16 (January 1990), Ministry of Agriculture, Fisheries and Food, London.

Dearfield, KL, *Comments on the Mutagenicity of EBDCs Based on Available Studies,* Memorandum to Albin Kocialski, EPA 24/9/89, Health Effects Division, Office of Pesticide Programs, US EPA, Washington, DC Mauer, I, *Mancozeb—Review of Mutaghenicity Data Submitted on Mancozeb and ETU in Response to Data Call-In Notice of January 17, 1983—ID No 707-78, Accession No 259044.* Memorandum to Arvella Farmer & Henry Jacoby, EPA 30/4/86, Hazard Evaluation Division, Office of Pesticide Programs, US EPA, Washington, DC.

Mauer, I, *Mancozeb—Mutagenicity Studies Submitted Under MRID Nos 40810201 to 40810205 and 40778901 EPA ID No 4581-358,* Memorandum to Lois Rossi/Susan Lewis, EPA 9/1/89. Health Effects Division, Office of Pesticide Programs, US EPA. Washington, DC.

APPENDIX 52

Memorandum Submitted by the Road Haulage Association Ltd (RHA) (C79)

INTRODUCTION

The Road Haulage Association (RHA) was formed in 1945 to look after the interests of haulage contractors in various areas of the country, in effect, amalgamating local organisations that had been established. The association has subsequently developed to become the primary trade association representing the road transport industry and there are now some 10,000 companies in membership. Of those 10,000, approximately 2,000 are involved in the transport of foodstuffs.

HAULAGE OF FOODSTUFFS

Haulage is essentially a service industry providing transport of goods for other industries. As such, whatever is carried in our members' vehicles is expected to be delivered in as good a condition as when it was loaded. Failure to work in this way inevitably results in loss of business.

The transport of foodstuffs is, of course, covered by the same hygiene requirements that apply to the rest of the food chain. These are primarily the Food Safety (General Food Hygiene) Regulations 1995, the Food Safety (Temperature Control) Regulations 1995 and the EC Directive on the hygiene of foodstuffs (93/43/EEC). The RHA is currently working with the Food Hygiene Service of the Department of Health and other industry representatives to produce a guide to hauliers on how best to comply fully with the regulations. Enforcement of these regulations is the responsibility of Trading Standards officers. In addition to the regulations a number of agreements and working practices exist which provide further protection.

RISKS

In the transport of foodstuffs and pre-food (eg grain) the prime area of risk is that of cross contamination of a load, or part load, by a previous load or the other part of that load. In the case of live animals, and setting aside issues relating to humane handling, the primary food safety risk is that of contamination of the meat resulting from contaminants carried on the hide or fleece of the animal transported.

CURRENT PRACTICE

Meat

Fresh meat is carried in dedicated, temperature controlled purpose-built transport. The vehicles carry equipment to enable transit temperatures to be monitored at all times. Permanent records are kept giving the capacity to identify every occasion that the temperature varies. It is a statutory requirement (under the Food Safety (General food hygiene) Regulations 1995) that companies must provide proof that the cleansing and sanitising regimes required have been completed correctly. This is also generally incorporated into terms of trade. Enforcement by Environmental Health Departments seldom encounters problems in this area.

Cooked meats are carried in different vehicles from those operating in the fresh meat sector. The products are multiple packed so that the primary duty of the haulier is the control of the temperature. Cross contamination is rare except in the case of damaged packaging when the item is generally condemned. In the meat sector only tinned produce can be carried as general haulage in standard ambient temperature vehicles.

Animal Products

Animal products (eg Mammalian Bone Meal, Tallow etc) are usually transported in vehicles dedicated to a contract following which thorough cleansing and sanitising is effected before any other contracts are undertaken. The cleansing and sanitising process involves thorough pressure cleaning with a 1 per cent hot (70-80 degrees centigrade) solution of a non phenolic combined food grade detergent/sanitiser. The type of vehicle employed will depend on the product being carried and the hygiene requirements normally will be specified in the haulage contract as specific regulations will apply.

Agricultural Produce

Other agricultural produce will be carried in appropriate vehicles to conditions and temperatures determined by the owner of the produce. Horticultural produce will be temperature controlled and multiple retailer practices determine that both vehicle interiors and the pallets used are appropriately cleaned. Bulk movements of grain, animal feeds and sugar beet are closely monitored for contamination by laboratory inspection prior to unloading. Similar checks are carried out on root crops and pulses which may be carried on specialist vehicles.

Livestock

As mentioned above, the primary risk associated with the transport of live animals is that of contamination of the meat resulting from contaminants carried on the hide or fleece of the animal transported. Following the Pennington report in April 1997 the issue has been the subject of discussion between the RHA, the Meat Hygiene Service, the Meat and Livestock Commission and others. These discussions have led to an agreement on working practices and duties which will be closely monitored and, if necessary, improved. Essentially the agreement means that each sector of the industry will take appropriate responsibility to maintain clean animals going into the food chain.

There is a further issue to which the Committee may wish to give some consideration, and that is the legal liability for ascertaining the health of livestock. At present hauliers are guilty of an offence if they transport a casualty animal as part of a fit consignment. Clearly there will be some occasions where it is perfectly obvious that a particular animal is suffering from a condition which makes it unfit to travel and under such circumstances, the haulier should refuse to accept the animal for transport.

However, there are many circumstances (which occur regularly) where the RHA believes it is unreasonable to find the haulier liable. For example, it is quite common for animals to be collected during darkness. When this is the case, the haulier must accept the farmer's word as to the fitness of the animals. Without any evidence to suggest anything is wrong, the haulier has no reasonable grounds to refuse to take the animals. Yet if, on arrival at the destination, the vet determines that the animal should have been classified a casualty, it is the haulier who is held responsible. Similarly, there are many conditions which will mean an animal is unfit to travel but which will not be visibly obvious to the driver—after all, whilst our members employ qualified HGV drivers they generally are not qualified vets. The Committee may wish to consider whether, under certain circumstances, it might be more appropriate for legal liability to lie with the consignor rather than the consignee.

UKASTA CODE

Recent heightened concern about the general levels of food safety has led to a number of end purchasers seeking to establish a complete audit trail for goods right from the farmer to the shop. As a result increasingly stringent conditions are being placed on those involved at various stages of the supply chain including the haulage companies.

A prime example of this is the Code of practice that UKASTA (the UK Agricultural Supply Trade Association which represents the merchants handling grain, oil seed, pulses etc) is seeking to introduce. Essentially the Code seeks to restrict the types of goods that can be carried in vehicles which are then to be used to carry the product etc.

The RHA does of course understand that UKASTA is itself coming under increasing pressure from its customers for more stringent controls. We also understand why supermarkets and members of the public are demanding such measures. However, we remain concerned about a number of aspects of the Code. For example:

- most of the produce concerned can be described as a pre-food rather than a foodstuff. As such, all undergo thorough cleaning as part of the normal processing procedures—for example grain is cleaned at the mill when being turned into flour. To our knowledge, there has never been a case of contamination of flour by a product that could have originated either from the farm or from the vehicle in which it was transported (eg sand);
- the Code would mean that many smaller haulage companies would either have to accept significant periods during which they would be unable to work or cease operating in this particular area of haulage. (Because agricultural products are seasonal, hauliers would normally switch to carrying other products during the intervening period but the Code rules out the carriage of a large number of the products which would be considered suitable for the types of vehicles involved); and
- hauliers involved in this area of business on a regular basis would be forced to comply with the Code. However, during peak times when there is generally a shortage of transport available, the merchants and millers would be likely to disregard the Code just to secure some form of transport as there is no requirement within the Code for them to use only companies whose vehicles comply. As a result, those hauliers complying with the Code would be put at a competitive disadvantage since they would be securing only the same rates for the business as those that did not comply.

In addition there are a number of more specific problems concerning the application of the Code and the list of excluded materials:

- whilst the Code prevents hauliers using a vehicle which has previously carried an excluded product, should he purchase a second-hand vehicle (which may well have worked in an excluded field) he may sanitise the vehicle and put it to work within the Code. In these circumstances clearly he should also be able to sanitise his own vehicle following its use in any excluded haulage;
- mammalian protein (eg Meat and Bone Meal) has been banned from use in animal feedingstuffs to avoid and risk of transmitting BSE to the animals to which it may be fed. It is therefore understandable that any possibility of infected material entering the human food chain should be

avoided. However, the risk posed by Meat and Bone Meal is infinitesimally small and the possibility of cross contamination from a cleaned and sanitised lorry body is less than one per cent of that posed by T bone steaks. The inclusion of this material in the exclusion list therefore is for emotive reasons rather than scientific;

- cereal seed treated with toxic dressing also features on the excluded list. This creates problems for the hauliers because it assumes that the seed merchant will inform the haulier that the seed has been treated. In addition, the level of contaminant transferring to the truck body will be very small and after one or two loads of sharp sand are carried it is unlikely that any measurable level of contaminant would remain; and
- radioactive materials feature on the list despite that fact that these materials are not carried in the same vehicles (grain tippers) and they are controlled by a diligent code of conduct which is rigorously enforced.

CONCLUSION

The RHA believes that the combination of existing legislation and good practice already provides a high level of protection to the consumer and we see no need, subject to the above, for further legislation in this area. The RHA will continue to co-operate, on behalf of its members, with all parties to ensure that safety remains a key priority and to ensure that where necessary (for example as scientific knowledge progresses) improvements are made to working practices.

13 January 1998

APPENDIX 53

Memorandum submitted by the Freight Transport Association (C80)

INTRODUCTION

The Freight Transport Association represents the transport interests of British industry. Its 12,000 members operate nearly half of the heavy goods vehicles in the UK, consign nearly 90 per cent of the goods carried on Britain's railways and include the major importing and exporting manufacturing companies who are users of container shipping services and air cargo services.

Many FTA members are involved in the production, sale and transportation of agricultural products and foodstuffs. The issue of food safety is taken very seriously by these companies and compliance with legal standards is seen as a minimum requirement. FTA has worked closely with Government, its members and other parties in order to promote high standards of safety in food transport.

THE TRANSPORT OF AGRICULTURAL PRODUCE

In the agricultural markets, FTA members include the major food producing companies, millers and dairy producers. Some of this produce is moved by these companies in their own specialised vehicles, so-called "own-account" operators. However, many transport movements are contracted out to numerous road haulage companies, due to the seasonal nature of many movements and the commercial trends in businesses to consolidate around their core production activities. Many haulage companies deal with particular types of produce due to the highly specialised nature of the equipment required, for example livestock carriers, refrigerated and chilled transport units, bulk grain carriers, milk tankers etc. Many transport units are now dedicated to the carriage of foodstuffs and are permanently marked with warnings that they are to be used "For Foodstuffs Only".

Much new investment is being made in these activities. For example, the development of new gas refrigeration systems which dispense with the need for supplementary, externally mounted 'fridge motors, will allow hygiene standards to be met with reduced emissions of noise and exhaust gases. Removable partitions within trailers will allow compartments to operate at different temperatures on an outward journey but return fully laden at a single temperature, so optimising the use of that vehicle and reducing the number of journeys needing to be made. This has all combined to ensure that hygiene and safety standards are maintained whilst minimizing the environmental impact of transport and providing the consumer with increased product choice and quality.

FTA feels unable to comment on many of the specific areas under the Committee's consideration, as the medical and scientific issues are outside FTA's area of expertise. However, in considering the role of transport in the course of its Inquiry it is important that the Committee recognises the high statutory standards that now prevail and the steps taken by industry to comply with, and in many cases exceed, these requirements.

FOOD SAFETY RISK IN TRANSPORT

The carriage of foodstuffs in the UK is governed by the Food Safety (General Food Hygiene) Regulations 1995, supplemented by further regulations covering temperature-controlled foodstuffs and a number of product-specific regulations. The regulations implement the European Union's Food Hygiene Directive adopted in 1993. Their introduction was welcomed by FTA as they replaced much outdated, prescriptive legislation with modern, goal-setting requirements which allowed vehicle operators some flexibility in adapting to the particular circumstances of different types of produce and vehicle requirements.

Compliance with these standards is taken very seriously by responsible vehicle operators. It is FTA's policy to promote awareness and understanding of this legislation amongst its members and to that end FTA is compiling an Industry Guide to the regulations jointly with the Road Haulage Association, Transfrigoroute and the Cold Storage and Distribution Federation. The guide will cover best practices in food hygiene during transport, including the loading and unloading of vehicles, the design of loading bays, the transport of temperature-controlled consignments, staff training and supervision, and the development of hazard analysis programmes. The guide is being developed in conjunction with the Department of Health, and will complement similar guides being developed for other sectors. Publication of this guide is currently awaiting approval by the Department of Health.

FTA has also supported the development of a code of conduct by the United Kingdom Agricultural Supply Trade Association (UKASTA), which covers the carriage of agricultural products. The Code places requirements on transport companies which exceed the legal minimum standards, and covers issues such as the cleansing of vehicles, product separation and the establishment of an audit trail tracing a consignment's passage through the supply chain.

Additional controls are imposed on the quality of foodstuffs throughout the supply chain by food retailers, who insist on produce meeting high standards of hygiene and quality for sale. Retailers have established audit trails extending from producer to retail outlet to ensure that standards are maintained and that the high hygiene standards that they set for suppliers are not compromised during transport.

The introduction of these regulations and of higher standards of food hygiene in the transport chain generally has inevitably brought higher capital and operating costs for the vehicle operator. These have needed to be recovered through higher rates which ultimately will be passed on in higher prices for the consumer. Rigorous and effective enforcement of the statutory standards is necessary in order that those operators willingly complying with the legal requirements, and incurring these extra costs, are not disadvantaged by those who may seek to offer a cheaper service by avoiding compliance with statutory standards.

FTA believes that the recently introduced legislation is adequate to ensure high standards of food safety during transport. The development of best industry practices offers a means of continual improvement and its wider adoption should be encouraged. Better enforcement of the existing statutory controls is essential to ensure continuing high standards and to prevent unfair competition. To this end the adequate training of enforcement officers is an important factor and sufficient resources need to be made available so that the enforcement activity is a real deterrent to irresponsible operators and producers.

TRANSPORT OF LIVE ANIMALS

The application of food safety legislation to the carriage of live animals is limited as the risk of contamination normally arises only after slaughter. The carriage of live animals, particularly for export, has provoked intense emotion and vocal protest from animal welfare groups in recent years but this has been based on compassionate grounds rather than concerns for food safety. In this aspect the responsibility of the vehicle operator extends to compliance with statutory limits on the duration of journeys and the frequency of feeding and watering of animals. If these limits are deemed to be too long then it is the responsibility of Government to revise and reissue them. It is unreasonable to hold vehicle operators responsible for standards of operation based on highly subjective grounds which ultimately need to be set by Government.

Enforcement of animal welfare legislation should only be carried out by properly trained officers, who should remain independent of other, unaccountable, groups.

CONCLUSION

The minimisation of food safety risk during transport is assured by the enforcement of clear, unambiguous, practical standards. The techniques and technology of transport operations has allowed very high standards of hygiene to be achieved during transport operations. The transport of food is considered a specialised sector within distribution operations, given the need for special management systems and record-keeping, as well as the specialised nature of the transport equipment involved. FTA does not believe that any further legislation is required and that the role of the proposed Food Safety Agency should be to ensure greater awareness and compliance with existing controls, in cooperation with industry.

ACTIONS FOR GOVERNMENT

FTA recommends the following actions be taken by Government:

1. Ensuring clarity in the standards and demands of the law.
2. Resourcing adequate and rigorous enforcement of the existing statutory standards.
3. Provision of adequate training of enforcement officials.
4. Identification, dissemination and promotion of industry best practices in food transport.
5. Speeding up the approval of Industry Guides to the Food Hygiene Regulations by the Department of Health.

14 January 1998

APPENDIX 54

Memorandum submitted by Mr R G T Lazenby (C84)

It is very clear from reading the Interim Proposal by Professor P James, published in April 1997, there is a good understanding of what is required from the new Food Standards Agency.

One area of concern to me is that the paper does not advocate sufficient representation from the Food Industry in the proposed Agency. I feel it is paramount that there is a greater working partnership, including the Industry, to encourage the successful restructuring of food safety to develop into working practice.

The principal requirements are documentation and legislation, but it must be understood that the industry is so massive that it must be looked at in the light of working practice and working relationships from within the industry. One always has to remember that food and its creation, feeding, presentation to the actual eating, involves every single person in the land.

There is a requirement from everyone for due diligence. It is not purely up to the growers, the creators, the processors and the retailers to carry out their function, it is also up to the consumer. Every housewife, every household, every restaurant, every hotel, everyone has to take great care of the food that they are buying, storing, cooking, creating and serving. No singular part can be removed, all of these individuals must be involved with every food safety process.

EDUCATION

A programme of educating everybody in this country must be instigated to educate them in the modern way of living, and how it can work together with the basic principles of buying, storing, cooking; it is an overall package that has to be provided, and not splintered off into different areas, governed by individual agencies.

To educate at all levels of the already existing employees within our industry, and to all new potential people in the industry from apprenticeships, through further education colleges and universities, and generally improve the level of understanding of the commitment that is required to work in the industry. Education also needs to be provided in all of the schools in new basic food hygiene, food cooking skills etc. We must educate our children in the very basic skills required. Again partnership is required, the creation of new food hygiene awareness programmes throughout the media.

There must be an overall policy to educate people in the basic requirements. There are many fragmented pieces of information circulated, and simple guidelines must be made available to everyone.

LICENSING

The food industry first and foremost requires a working partnership with the government. The majority of food companies are good quality producers and with a little extra help from the government and its agencies can improve.

The licensing of all growers, feeders, breeders, keepers, transporters, slaughterers, cutters, handlers, processors, packers, retailers, wholesalers, caterers, bi-product producers should be a legislative requirement for our Industry, and this would lead to a better understanding of the new Food Safety Act.

The creation of new comprehensive standards for all of the above would be the way forward for all Industry partners, which must include new certifications for all persons working within each of the industry sectors under the new licenses.

In order to police these standards there must be common ground in each one of the particular sectors, and again there must be co-operation between government agencies and the suppliers of food, to allow a much closer partnership relationship which would allow it to work.

MARKETING

There is a need to create a marketing department within the government agency to deal with all the different aspects of the food industry and to market the good side of the industry properly and not to be singly selective in any particular area.

PR

There is also a requirement for a properly created PR department within government agencies to deal with all legislative problems, scares, recall procedures, advice, guidelines, which would allay "scaremongering" before getting out of hand. This is being created by so many independent so called "departments" for their own personal views. This must be stopped at all costs and we must ensure that any information passed to the media is properly controlled and monitored, therefore saving so many people from untold stress.

GENERAL PUBLIC

One needs to look at the overall food industry, not at selective parts of it, and then highlight the particular areas of problem. It needs to be taken as an overall industry. Simple guidelines need to be drawn up at every stage, and maximised just as the food scares are created, we need safeguards to allay any fears, thereby assuring that British food is the best. There is no doubt that it is utmost in all our minds that British food should be safe, but it takes everybody in our industry, and the housewife at home, to take care of the very food that they purchase, and not leave it in the boot of the car on a hot day. Not buy it and take it to work, leaving it in the bag until cooked at tea time a few hours later. Not mix raw with cooked in one's fridge, not prepare raw and cooked on the same board. Heating should be carried out properly. Instructions which are provided by the different manufacturers on their packaging are primarily a guide to people who are aware of the basic simple cooking requirements.

It should not be the sole responsibility of the Food Industry to provide the public with basic cooking and storage skills. This should be the starter point, not left to the labelling on the products. The labels should be clear and precise, but within the legal guidelines of trading standards legislation. They should not be taken as a cookery guide.

FUNDING

Finally, the Food Standards Agency should be independently funded, if not by the Government directly, through one of its agencies. It should not be funded by the Industry as this is bound to lead to the corruption of the new Food Safety Act, if by no other reason than commercialism.

It would be up to the new Standards Agency through their programme of education to improve the public's awareness of hygiene and basic cookery skills. This would alleviate a large number of consumer scares (enclosed MLC Food Safety Information leaflet, which should be available to every household in the land).

19 January 1998

APPENDIX 55

Memorandum submitted by Dr Richard North (C86)

Thank you for your letter of 28 January concerning the potential risk to public health from the application of sewage sludge and other organic waste to agricultural land, asking for my views on the same.

I presume your inquiry arose from the broadcast of the "Dispatches" programme on Channel 4, on 22 January, which I presented, to which effect I am surprised and concerned that the Committee should apparently be interested only in one part of the programme's findings, and not the other which dealt with the conduct of the Meat Hygiene Service in relation to meat hygiene.

On the other hand, perhaps I should not be surprised as I have already made a private bet with a number of my colleagues that the main interest shown would be in the second part concerning the spreading of abattoir waste, the conclusions of the first part dealing with meat hygiene being too complex and radical for the average person to take in.

To that extent, it is perhaps entirely unsurprising that a group of MPs who happen to form the current Agriculture Committee—with very little experience in agricultural and food safety issues—should be interested in the effectiveness of regulation in relation to the spreading of waste, yet appear to be entirely uninterested in the effectiveness (or ineffectiveness) of regulation in relation to meat hygiene in slaughterhouses.

As to my views on the potential risk from the application of "sewage sludge and other organic waste on agricultural land", I am able to assist only in respect of the application of abattoir waste, thereby confining myself to an aspect about which I have direct personal knowledge, based on work carried out by the Dispatches programme—which was just as rigorous as any academic endeavour—and other research.

By way of background, our best estimate is that is some 400,000 tonnes of "exempt" abattoir waste—that is, blood and stomach contents—produced by UK abattoirs each year, originating from cattle and sheep, in which there might be an expectation of finding *E coli* O157 (as well as other pathogens such as *Salmonellae* spp). The Environment Agency tell us they keep no central records on the amount spread on agricultural land, but it is probably the case that most of it is disposed of in this way. (To my knowledge a small amount is treated on-site in anaerobic digesters, to produce high-grade compost).

On the basis that one in one hundred cattle (on average) on the farm are *E coli* O157 carriers, and a considerably higher proporation of cattle are infected by the time they reach the abattoirs—and that blood and gut contents are mixed in the abattoirs—it is reasonable to assume that most batches of abattoir waste have a high probability of being contaminated with *E coli* O157.

I have no knowledge of the survival rate of *E coli* in quantities of this waste during storage and bulk transport but it is reasonable to assume that some organisms do survive—and may even proliferate. Once on or in the soil, Dr Andrew Maule of CAMR, Porton Down, told us that *E coli* O157 can survive—and possibly proliferate—for a period in excess of 130 days, and that the technique of soil injection may well increase its chances of survival.

As to our specific findings, we took samples from a site in Lanarkshire, where spreading had taken place, and recovered *E coli* O157 from all six samples of mud collected. Additionally, we took water samples from the outfall of a sub-soil drainage pipe which served a field which had been treated with abattoir waste, and again recovered *E coli* O157. Samples were also taken from a watercourse, into which the drain discharged, and where there were visible signs of pollution. *E coli* O157 was also recovered from those samples.

Control samples were taken from untreated land, and from water upstream of the sub-soil drain discharge, from which background levels of *E coli* were recovered, but no *E coli* O157 was detected.

It would be wrong to draw too wide conclusions from these findings, but it is safe to say that they demonstrate that abattoir waste is a source of *E coli* O157 in the environment, and is able to contaminate both farmland which may be accessible to grazing animals and water supplies accessible to those animals.

In my view, this problem is exacerbated by the concentration of the slaughter industry into fewer and larger plants—partly as a result of the regulatory burden—where infection is first concentrated and then disseminated on a massive scale. Where small slaughterhouses are involved, waste production is of a very much smaller scale, and products can usually be disposed of locally—limiting the spread of infection. With the advent of the massive industrial slaughterhouse, however, disposal has become "big business", with waste material being distributed nationwide, thereby maximising opportunities for spread of infection.

As such, the spreading of untreated abattoir waste, on an "industrial" scale, is a potential source of infection for farm animals and may thus have implications for human health. To assess the full potential of any risk to human health, however, it would be preferable for a wider sampling programme to be carried out, covering both soil and water, and the animals who have access to these sites, and/or the crops originating from them. This notwithstanding, it is my view that spreading untreated abattoir waste on an industrial scale may present a significant and unnecessary source of *E coli* O157 in the food chain.

Having regard to this, you may be interested to hear the government response to our findings, published in MAFF press release 21/98 on 22 January, an extract which is as follows:

> "The Government is aware of concerns that this practice may increase the amount of e coli on farms. But e coli will be present on farmland in any case from cow dung. That is why it is essential to take steps at the slaughterhouse to keep e coli out of the human food chain. That is the purpose of the clean cattle policy which this Government introduced".

Despite the fact that this statement begs the question as to how e coli (sic) got into the "cow dung" in the first place, it is clear that the government takes the view that any increase in *E coli* O157 should be dealt with at the slaughterhouse where—it claims—"Britain now has some of the most rigorous hygiene enforcement standards in the world" (MAFF, *op cit*). It is also interesting to note that the government lays great store by its "clean cattle policy", the effect of which is unproven and the scientific basis for which is slight.

As to the regulation of abattoir waste spreading, in the Dispatches programme, we drew attention to the limitations of the Waste Management Regulations, which require prior notification of spreading. The Environment Agency tell us that this "prior notification" can amount to a fax sent minutes before spreading is about to take place, giving their officials not time to attend a site to determine what might be happening.

Furthermore, although spreading is notified, there is no requirement to say *when* spreading will take place, so that such spreading can instead be delayed for some months after notification, and then may take place at any time, without any further notification. In some cases block notifications are lodged, on the off-chance that spreading might take place, leaving the agencies to guess if it might occur.

Nevertheless, we formed the impression from discussions with EA (and SEPA) officials that they were not focused on public health issues and were more concerned with physical pollution—despite the abattoir waste exemption being dependent on the requirement that disposal shall take place ". . . without endangering human health . . .".

We are unaware of the EA (or SEPA) having taken any microbiological samples of abattoir waste, to determine the presence of *E coli* O157. Nor do they appear to have carried out any research to determine whether the practice of spreading does in any way endanger human health, to which extent the agencies may be failing—for whatever reason—in their duties. However, if it was shown that any specific practice or circumstances involving the spreading of abattoir waste did endanger human health—or for that matter the health of animals—then the environmental agencies do have powers to take action.

In this, there seems also to be some statutory role for local authorities, in that the deposit of abattoir waste on land could well fall within the provisions of section 79 of the Environmental Protection Act (Statutory Nuisances), in which case the local authority might be empowered to act. However, the exercise of any such power would be dependent on the local authority having proved the deposit was "prejudicial to health", which would be difficult without more research as to the presence, survivability and transmission characteristics of *E coli* O157 in the soil—and the specific relationship to *E coli* O157 poisoning in man.

In any event, local authorities would have difficulty in acting, as notifications are made to the environmental agencies and not to themselves, so they may well be unaware of spreading in their districts.

This notwithstanding, I would remind you that the Dispatches programme did also consider the effect of slaughterhouse regulations and the activities of the Meat Hygiene Service in spreading *E coli* O157, or causing its greater proliferation.

In this there are three mechanisms which we identified: the first is the intrusive nature of the inspection process, whereby inspectors are looking for invisible bacteria and, in so doing, spread the very bacteria they are unable to see. Secondly, by imposing massive inspection charges on slaughterhouse operators, the MHS forces slaughterhouses to increase throughputs and throughput rates, in order to generate the income to pay for the charges, thus increasing the risks of contamination and cross-contamination. Thirdly, because of the disproportionate effect of the charges on smaller slaughterhouses, the MHS is directly causing the closure of small, craft-based slaughterhouses, increasing the travel time—and stress—of animals which have to travel to larger more distant plants, thus increasing infection rates.

It remains to be seen whether these influences have a greater effect on the prevalence of *E coli* O157 on finished meat than the contamination of the farm environment, but it would be absurd to focus entirely on the abattoir spreading problem without also assessing this aspect of public health, especially if the outcome was a recommendation to increase regulation on waste spreading without addressing the effects of inappropriate regulation in the slaughterhouses.

29 January 1998

APPENDIX 56

Supplementary Memorandum submitted by Mrs L Campion (C87)

GENETICALLY ENGINEERED CROPS

If the safety question of genetically engineered crops is unresolved, why is it that approximately 70 Field Trials have been licensed in England and Scotland?

The John Innes Centre has Wheat planted in Norwich. This crop has Ampicillin Resistance & Glufosinate Herbicide Resistance. Weed killer resistance means that the crop can be sprayed with glufosinate herbicide withut being harmed and only the weeds will die.

But what about the small quantity absorbed by the wheat seed that goes into our daily bread? Glufosinate is toxic to humans and animals.

As the wheat has Ampicillin resistance, when the wheat is used in food, the person consuming it (daily bread) will become immune to the anti-biotic Ampicillin when it is prescribed by their GP. Genetic Engineering is an issue of worldwide concern. In the rush for acclaim and financial gain, scientists and their pharmaceutical employers are ignoring the dangers to health and environment which may only be apparent in years to come. Genetic variations are hereditary by nature and are passed on from generation to generation.

How will the NHS cope with the burden of a sick society?

The giant chemical companies fund many research labs in the UK. When a company spokesperson talks about food safety and the view of "experts", we discover that these "experts" are directly or indirectly involved with the same companies. This is dishonest. We are being deceived.

Our elected representatives are responsible for the health of the nation and they must take the blame when things go wrong.

30 January 1998

APPENDIX 57

Memorandum submitted by the Association of Port Health Authorities (C89)

1. We note that the Government White Paper states, "Against the background of a need for increased spending on the regulatory and enforcement activities carried out at national and local level, the Government believes that the food industry should bear the bulk of the costs of improving food safety and standards. The food industry as a whole will benefit from the improved public confidence in food safety and standards that the Agency is likely to bring. The Government is therefore considering possible mechanisms for passing on a greater part of the costs of food safety work directly to the food industry, recognising that over time the bulk of the costs are likely to be passed on to the consumer".

It would seem unreasonable to us that the food industry in the UK should pay the costs of enforcement of food standards, while local authorities continue to bear the costs of checking imported food.

2. We note that a question was raised by Mrs Winterton MP following the Minister's statement on 14 January 1998 concerning the standard of imported food. It is the belief of the Association that to ensure the safety of imported food of third country origin, a proper control system should be in place throughout the European Union that encompasses all types of food.

3. The arrangements currently in place treat foodstuffs of animal origin differently from other foods. Products of animal origin are subjected to a regime which provides common standards, checking levels and examination facilities at Border Inspection Posts throughout the European Union. The benefits of this are obvious. Imports (and exporters) can expect similar treatment in any Member State and audits are carried out by Commission Inspectors to ensure conformance. The major benefit for food saftey, however, is that there is no "back door" where non-complying goods can enter via another member state with different standards (ie lower or no standards).

4. The current legislation in relation to imported foods not of animal origin varies from one member state to another. Checks at points of entry have been carried out in the UK since the first decade of this century. Most other member states do not have such checks in place on a properly organised basis.

5. Foods of non-animal origin are frequently a risk to health. In addition to the usual problems of the improper or illegal use of food additives and the presence of various contaminants, particular problems are evident with some of these foods. Mycotoxins, particularly Aflatoxins, are often found in nuts, dried fruit and other foods and the Association welcomes European legislation now being implemented as a helpful reinforcement of UK legislation, recent work has also identified the microbiological contaminants of spices as a problem.

6. The European Commission has a current programme of visits examining controls by member states under Directive 93/99/EEC and the Association was pleased to have been invited to provide information and facilitate visits to some of its Member Authorities, it is our view that the time is right for Government to make the case that the UK system of controls on all imported food at points of entry provides an excellent model on which to base a European Union wide system. We also contend that such a system should be funded by a standardised charging regime to mirror that provided for products of animal origin.

5 February 1998

APPENDIX 58

Supplementary Memorandum submitted by the Institute of Trading Standards Administration (C90)

Thank you for your letter of 16 January 1998 giving the Institute the opportunity to put further evidence to the Agriculture Committee.

The establishment of a Food Standards Agency with a "plough to plate" remit has been welcomed by the Institute. It should help to improve the co-ordination of food policy and resolve some of the problems that have effected food standards and safety in recent years.

The Institute intends to submit a detailed response to the White Paper. The main areas of concern which may effect the Institute's submission to the Agriculture Committee are:

The areas in which ITSA still have concerns relate to:

1. Resources: The White Paper, whilst advocating an audit role for the Agency in ensuring local authorities enforce food legislation effectively, does not adequately address the issue of the funding necessary to do so. What measure the Agency will adopt to deal with authorities failing to perform to an adequate level, also needs to be identified.

2. Co-ordination: Whilst the White Paper advocates a wide remit for the Agency, there will be other Government departments involved in developing food policy. It will be vitally important that Parliament ensures that the Agency has the ability to influence all food policy and that all departments, and the Agency, work together effectively. ITSA would also wish to see a select committee responsible for auditing the Agency's performance and the continuation of the present cross departmental ministerial working group.

3. Enforcement Expertise: Both the Commission and the Executive of the Agency must have considerable representation from people with experience of local authority enforcement of food legislation. This will ensure that future controls are enforceable, unlike some that have been recently introduced and create a better relationship with local authorities. Without effective enforcement of food legislation at local level then food standards and safety will not be improved.

I will forward you a copy of the full ITSA response in due course.

5 February 1998

APPENDIX 59

Supplementary Memorandum submitted by Mr Jeremy Leach (C93)

1. Further to my Memorandum/Evidence dated 29 September 1997, I would like to make the following additional comments.

2. I broadly welcome the proposals set out in the Government's White Paper: The Food Standards Agency—A Force for Change. It is seen as a positive move that the proposed Agency should act independently of specific sectoral interest. This in my view will go a long way to restore public confidence in all aspects of the food industry and the regulation of it. I also support the essential aim of the agency being the protection of public health in relation to food.

3. I am particularly interested in the information contained in paragraphs 3.20 to 3.22—Public Information and Education, and paragraphs 4.33 to 4.36—Food Hygiene. It will clearly be a responsibility of the Food Standards Agency to provide advice, information and guidance to consumers and to increase understanding of food safety matters for all sectors of the food industry, this is very welcome. In my view educating consumers about food safety will motivate them to demand higher standards of food hygiene and this would have positive effects for the whole food industry and improve public health. There is research to suggest that many caterers only consider food hygiene to be important when something goes wrong or when an inspector calls—this attitude needs to change. A more discerning customer could have the desired effect. An approach based on these principles would be far more compelling to a food business to improve standards than the punitive sanctions of the law.

4. I was disappointed not to see more of a role for the Agency in Liaising with the Department for Education and Employment. In my view school children need to be made more aware of food safety issues generally and in particular in the home environment. If food safety is deemed to be so important then I believe it should receive greater recognition at the four Key Stages of the National Curriculum. Home economics, in many schools, has tended to fall under the umbrella of Technology which is compulsory at all the Key Stages, but how Technology is interpreted is up to the individual schools, however, I do acknowledge that food is stated as a material with which students should be given opportunities to work with. I also recognise that food safety may also be used as a topic in other subject areas within a school's learning programme, for example Personal and Social Education. But this does seem to me to be a very haphazard approach to a subject which will have an impact on students in one way or another for the rest of their lives. This could be an issue that the Food Standards Agency may wish to become involved.

5. I hope my comments will be useful to the Committee in its current inquiry into food safety.

9 February 1998

APPENDIX 60

Supplementary Memorandum submitted by the Advisory Committee on Pesticides (C94)

Your letter of 16 January to Mr Williams invited the Advisory Committee on Pesticides (ACP) to add to its original evidence to the Select Committee's Inquiry into food safety. I hope that the following brief comments are helpful.

In our evidence, the ACP explained that the regulation of pesticides draws together a number of inter-related issues to reach decisions on the approval of pesticides, taking account of broad issues of human and environmental safety. We explained the merits of this integrated approach and why, therefore, we did not see the separation of food safety considerations from the other connected issues as being a fruitful approach.

The Committee is pleased to see that the Government's White Paper recognises the virtues of an integrated system of pesticide regulation and proposes that the Food Standards Agency should become a full participant in this. The White Paper makes several recommendations for involving the Agency in the operation of the ACP. The proposals made would give the Agency a role in the preparation of meetings and a full say in the decisions made following the Committee's recommendations.

The proposals would essentially put the new Agency on a level footing with the Government Departments already involved by extending arrangements familiar to the Committee. I am therefore confident that the system proposed in the White Paper could be implemented effectively. The regulatory process and the workings of the ACP involve a wide number of viewpoints and fields of expertise but all those concerned are aiming for an effective system which protects the public and the environment.

In short, the ACP welcomes the prospect of a powerful Food Standards Agency playing a full part in the existing comprehensive and integrated regulatory system for pesticides.

9 February 1998

APPENDIX 61

Letter to the Committee Chairman from Mr Michael Martin (C98)

I give below some information about Bovine Immunodeficiency Virus, the cattle equivalent of HIV. I had not heard of it before the radio programme I mention and have met with no success in obtaining further information from the BBC or anyone else. I am not susceptible to irrational fears about food or anything else but, in view of the failure to disclose information about BSE, I do wonder if something similar may be taking place with regard to BIV.

On Radio 4 in September 1996, John Waite reported the disturbing case of the prize-winning herd of cattle in Cheshire that had succumbed to a mystery disease, which only a chance encounter with vets in Canada revealed to be Bovine Immunodeficiency Virus, which was reported by a Canadian vet to be a considerable problem in North America, necessitating the slaughter of many cattle. When the farm vet and a Professor of Vet Science approached your Ministry, they were told that they had known of the disease for years and that there was no evidence it could affect humans. The Professor responded with "They would say that, wouldn't they?" and added that that was exactly the complacent attitude MAFF had adopted 10 years ago to first reports of BSE. Waite reported that, far from being grateful that their colleague had notified an agent potentially harmful to their own herds, neighbouring farmers were shunning both the farmer and the vet.

I wrote to the BBC to say that the facts outlined were potentially so alarming that, if the programme was not being alarmist, an immediate follow-up was needed for a much larger audience, and therefore on TV; otherwise an explanation was needed why there was no cause for alarm when the programme clearly stated that there was one. Unusually for the BBC, I received no reply.

I also wrote to Asda, Tesco and McDonald's, who replied without any reference to BIV but assuring me that their products were free of BSE. Only after I wrote again to their Chief Executives did they reply, variously:

- that MAFF says firstly that detection of this supposed disease is unreliable, which contradicts their statement on the programme and the Canadian vet, and, somewhat inconsistently therefore (Don't you think?), that secondly there is no risk to humans (so why do the Americans slaughter infected animals?);
- that (from Asda) BIV infection in cattle has been known for a long time, but poses no risk to human health as it does not infect human cells (which it seems to me we have heard before, re BSE) and anyway that (from Tesco) cows from the only (known) infected herd in the UK will not enter the human food chain, a claim also made about BSE and which seems scarcely reliable in view of subsequent media reports about practices in UK abattoirs; and
- that (from McDonald's) BIV is very rare and at present there is no evidence to show that BIV affects humans (no more evidence than there was about BSE when J Gummer was stuffing beef down his daughter to demonstrate how safe it was).

I hope that you can give me and other consumers and taxpayers some reasoned assurance that this disease is and is likely to remain as harmless to humans as your Ministry has so far proclaimed.

5 February 1998

APPENDIX 62

Supplementary Memorandum submitted by the Institute of Food Science & Technology (C99)

Thank you for your letter of 16 January. Through its Technical & Legislative Committee, the Council of the Institute welcomes an opportunity to add to its written evidence to the Agriculture Committee in the light of the proposals contained in the White Paper *The Food Standards Agency: A Force for Change* (Cm 3830).

PERFORMANCE CRITERIA FOR THE FOOD STANDARDS AGENCY

While we appreciate that the White Paper is concerned with structure and guiding principles, and that some of the fleshing out with specifics will have to be done by the Food Standards Agency itself, as set out in paragraph 6.12, we consider that, in the Bill that brings the Agency into existence, the Government and Parliament should set it some major performance targets for achievement. We would be pleased to help and advise on suggestions at that time; but obvious examples are: a halting of the tide of rising incidence of reported food poisoning followed by a year-on-year reduction in the annual figures; and a year-on-year improvement in public understanding of the basic principles of food hygiene and nutrition as measured by properly-conducted public understanding and attitude surveys.

A Parliamentary Select Committee for Food?

We also support the view (paragraph 6.17) that a Parliamentary Select Committee on Food be established to monitor the Agency's activities. We realise that at present your Committee deals with food as well as agriculture, but with the separation of food from MAFF's continuing agriculture responsibilities, there would be benefits in having two Committees.

Training of Food Inspectors

We note in the last bullet point in the box within paragraph 3.44 that the Agency might become involved in the training and qualification of food inspectors. Under the current arrangement, this Institute is the examining body for one route to the Higher Certificate in Food Premises Inspection. Another route is provided by the Chartered Institute of Environmental Health (and the Royal Environmental Health Institute of Scotland in Scotland). Under the Department of Health's Code of Practice No 9, all inspectors of higher risk food premises working in a food hygiene enforcement authority must hold the Higher Certificate. Our procedure, approved by the Department of Health, is based on in-depth evaluation of a candidate's portfolio of formal qualifications, further training and experience, using defined and published criteria covering all the relevant areas of knowledge.

This assessment is currently applied only to food hygiene inspectors; but because it is modular, and because many of the modules would in any case be common, it could fairly readily be extended also to cover food standards inspectors. This approach could be adapted to provide separate qualifications for food hygiene inspectors (as at present) and food standards inspectors or to provide a comprehensive qualification for food inspectors able to operate across the whole spectrum.

It may also be of interest that the Institute is exploring the feasibility, for people inspecting food premises within the food industry, of a new qualification that would be of the same standards as the present Higher Certificate and would cover virtually the same syllabus. It seems to us that there are advantages in ensuring that people throughout the food chain, and irrespective of their allegiances, should demonstrate comparable levels of knowledge and expertise.

We would be very happy to discuss any of these matters with Agency staff as soon as it is convenient.

Nutrition

We welcome the approach adopted in Chapter 5 to nutrition, but in view of the principles set out in paragraphs 5.7, 5.8 and 5.9, we consider that the third and fourth bulleted items in paragraphs 5.11 would be more appropriately transferred to paragraph 5.12, ie to a shared responsibility between the Food Standards Agency and the Department of Health.

Licensing and Financing

Our additional evidence is mainly focused on Chapter 8 of the White Paper, *Financing the Agency*. A key part of our evidence to the Committee and of our response to the Government on the James Report, was our recommendation of licensing of food businesses, with the licence dependent on fulfilment of specific conditions. We are therefore pleased to see that licensing is proposed in Chapter 8, but regret that, in Chapter 8, the title "Financing the Agency", the reference to "registration *or* licensing with fees" (our emphasis) and the absence of stated Government views on conditions attached to a licence, have created the unfortunate impression that the Government views money-raising as the predominant purpose of the proposals in Chapter 8. However, we note that in paragraph 8.18 the Government seeks views on "the extent to which the issue of a licence should be subject to conditions" and other licence-related matters. We welcome the opportunity to comment.

Licensing already exists piecemeal for dairy establishments and meat-cutting establishments, and indeed the provisions (including exemption and appeals procedures) in the Dairy Products (Hygiene) Regulations 1995 could provide a readily adaptable model for a general licensing procedure for all food establishments. The Approval of Dairy Establishments provisions do not explicitly require demonstrated food safety knowledge and competence, but do explicitly require the proprietor to carry out specified food safety tasks which could not be carried out without such knowledge and competence. We would, however, recommend that the requirement for demonstrated food safety knowledge and competence be explicitly stated in general licensing regulations, which we hope that the Government will introduce at an early date, without waiting for the Food Standards Agency to come into existence.

Criteria for "demonstrated food safety knowledge and competence" would need to be defined, ranging from a food manufacturing establishment requiring at least one appropriately qualified person, to even the

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smallest non-manufacturing food business requiring a person with a minimum of having undergone recognised food hygiene training at least to intermediate level, appropriate to the nature of the business. For small businesses, there might be a limited period of grace after the introduction of Regulations, to allow time for the acquisition of such training.

I attach, as an Appendix, our rationale and detailed recommendations on licensing [not printed].

We support the principle of payment of fees for a licence. There are many ways in which the basis for fees could be structured, but to avoid undue complexity, a flat fee per establishment commends itself. We consider that a flat fee of the order of £100 per annum per establishment would neither significantly affect food prices nor put small businesses out of business. It has the advantage of simplicity, and a rough-and-ready equity in that large businesses with multiple sites would require a licence for each and pay multiple fees accordingly. This is one of the reasons why we refer to "establishments" rather than "businesses". The other is that a "business" owning multiple sites might have some sites that fulfil the licence requirements but one or more that do not; a licence for an establishment could be revoked without affecting the other establishments. The term "food premises" has the advantage of being already legally defined in the Food Safety Act 1990, and could be used in relation to licensing, provided that the licence conditions extend beyond the state of the premises themselves, as indicated above.

We do not find any substance in the view that the funding thereby obtained from industry would somehow compromise the independence of the Agency. Payment of a compulsory licence fee does not carry any influence. Car owners pay compulsory car licence fees but do not thereby acquire any ability to influence transport policy or roads policy. For other reasons, however, we urge that the Agency be wholly or mainly funded by public money.

Local authorities, should issue, reissue and, where necessary, revoke licences, in accordance with centrally-established criteria, and collect the fees, retaining all or at least the major part and be ring-fenced for provision of greatly improved resources for local advice, inspections and enforcement. Failure to do so (as suggested in paragraph 8.11) would inevitably result in the funds not being used for those purposes. In our experience, such resources are in general very far from sufficient, and indeed are currently undergoing further cuts as local authorities struggle to cope with their budgeting. Many of the excellent food safety intentions promulgated by the Agency will founder unless there are substantially improved resources "on the ground", which only ring-fencing can ensure.

We have also noted, in the media and elsewhere, and regard as out of proportion, concerns that a licence fee of the order of £100 per year per premises (less than the cost of a car licence or TV licence) is going to be an insupportable burden on industry and/ or significantly increase food prices. It is a very small price to pay to restore the lost confidence in food that has cost, and is costing, the food industry far, far more. Even the smallest delivery business is not allowed to function without a paid licence for the van and a paid driving licence for the driver, and nobody considers those payments to represent an intolerable burden on the business; and a paid licence to operate a small food business has to be viewed in the same light.

Much more realistic was the view of the ASDA spokesperson at the meeting on the subject of licensing organised by Birmingham City Council on 18 November 1997, at which this Institute was represented. In his presentation he gave a lengthy list of the different licences that each of their stores had to hold in respect of aspects of their operations and said that they would have no problem about living with one more. This was a meeting of City Councillors with representatives of trade associations; large and small manufacturers, caterers and retailers; consumer groups; professional bodies; and interested individuals. The outcome was complete unanimity in favour of licensing with conditions attached to the licence.

Public Education on Food Safety and Food Hygiene

Of course food safety measures relating to the manufacturing, retailing and catering industries are only part of the need. We point out that microbiological food safety is both the area where the greatest need for improvement exists and the area most dependent on, and most susceptible to, improvement by the understanding-based conduct of individuals both at work and in the home. We therefore consider that one of the most important complementary tasks of the Food Standards Agency must be an educational role in imbuing the public at large, on a continuing basis, with an understanding of the principles and desirable practices of food hygiene. "The public at large" are of course all consumers in the home, but also includes all the people whose work demands understanding and practice of those principles, including farmers, farm workers, abattoir workers, food factory managers and operatives, retail staff and catering staff. So educating the public not only educates consumers but also supplements the formal training that those who handle, or take decisions about food handling, should receive, to the benefit of all sections of the food chain. Without this, food safety policies and regulations, however excellent, would not succeed in being translated into food safety practice. Moreover, the Food Standards Agency will need to interact with the Department of Education in securing the teaching of food hygiene in primary and secondary schools, so that it becomes "second nature" to tomorrow's adults. This, of course, requires teachers who are themselves sufficiently knowledgeable on food hygiene; and crash training courses for teachers will need to be organised.

As we did in our President's letter to Tony Blair on 2 May 1997, and in our response to the James Report, we reiterate our offer that the Institute is ready to contribute its collective expertise in advising on optimising the structure and the food safety effectiveness of the Food Standards Agency.

Finally we again offer assurance that the individual members of the Institute, whether working in industry, research establishments, University departments or food law enforcement, will, in fulfilment of their Code of Professional Conduct, continue to do all they can to ensure food safety and the effectiveness of the relevant food legislation and Codes of Practice.

13 February 1998

APPENDIX 63

Supplementary Memorandum submitted by the Association of Public Analysts (C102)

1. BACKGROUND

The Association of Public Analysts has presented both written and oral evidence to the Agriculture Committee on the matter of food safety. The oral evidence was presented on 16 December 1997. The White Paper "The Food Standards Agency; A Force for Change" has been published and the evidence already given by the Association has made reference to a Food Standards Agency and in particular to the roles of an agency in:

(a) monitoring the food chain;

(b) monitoring the enforcement of food law at the level of Local Authority; and

(c) reviewing current practices in food law enforcement.

2. COMMENT

The White Paper is a comprehensive document and it sets out the aims of the Agency.

The Association in particular supports enthusiastically the inclusion in the mandate of the agency not only matters associated directly with food safety but also those concerned with food standards and nutrition. Indeed there are occasions when aspects of food standards and food safety are interconnected.

2.1 *Food Safety*

Food Safety is currently uppermost in consumers' minds, largely because of the contamination of foodstuffs by pathogenic organisms, chemicals and toxins. The Association of Public Analysts has proposed that the establishment of microbiological standards for both raw and cooked foods be given urgent consideration by a Food Standards Agency. The need for such standards should not, however, be seen as an acknowledgement that any level of avoidable microbiological contamination is acceptable.

The Association suggests that the safe handling of food across the broad spectrum of primary production, manufacture, distribution, retail and in the home is insufficiently understood and that education, particularly in the catering and domestic spheres is essential.

2.2 *Nutrition*

The nutritional aspects of food and animal feedingstuffs are becoming increasingly recognised as playing a significant role in the life long health and well being of consumers as well as the health of farm animals and the animals in our homes. Consumers are becoming aware of this aspect. Nutritional declarations on prepacked foods are made either voluntarily or further to the requirements of the Food Labelling Regulations 1996. Animal feedingstuffs have long had to bear or be accompanied by nutritional statements as a part of their statutory declarations. Whilst for animal feedingstuffs tolerances for the declarations of the nutritional contents, such as protein, fat and carbohydrate content as well as the presence of essential elements, vitamins and growth promoters are prescribed in statute, no equivalent regulatory control exists for the tolerances of the nutritional declarations which are made on the packaging of foods for human consumption.

2.3 *Food Standards*

The use of food additives, such as synthetic colours, preservatives and antioxidants, in food is controlled by regulation and so those that are used are restricted to ensure their safe use. This aspect of food standards provides one example of food standards and food safety being interrelated. It has to be noted that twenty years or so ago the United Kingdom lead the world in the approach to regulating the safe use of additives in food. That that major achievement has been overshadowed by descriptions of additives as "unwanted E numbers" belies the failure to emphasise to consumers what has been achieved.

3. Review of the Public Analysts Service

Public Analysts have considerable ability and a reservoir of knowledge and experience relevant to the application of science to food law enforcement including the presentation of evidence in the courts of law where breaches in food safety and standards have been detected. This is a consequence of:

3.1 the broad remit of their duties

3.2 their professional training and qualification of Mastership in Chemical Analysis, a qualification granted by the Royal Society of Chemistry

3.3 over a hundred years of professional practice

3.4 the co-ordinating activities of the Association involving training programmes, professional scientific meetings, publications and internal communications, and the development of validated analytical methods. This work is undertaken on a voluntary basis.

Chapter 3 of the White Paper makes reference to a review of the Public Analyst Service in England and Wales, in Scotland and in Northern Ireland. The Association has members throughout the United Kingdom and their laboratories are well staffed and equipped. Some 600 people are employed within Public Analysts laboratories. Whatever the outcome of this review we advocate that:

3.5 this reservoir of experience of Public Analysts must not be lost. It must be built upon.

3.6 the review of the Public Analyst Service and the implementation of the findings of the review should not have any disruptive influence on ongoing food law enforcement. It is important that mechanisms must be in place to ensure that adequate food law enforcement, including the necessary scientific contribution, must continue both during the review and during the implementation of any changes identified as necessary by this review.

3.7 food law enforcement action through the courts must remain an essential part of the activities of official food control laboratories. Alternative systems of control and enforcement would have far reaching implications for the legal system in the United Kingdom.

3.8 food law enforcement laboratories must retain the broad based scientific ability that Public Analysts' Laboratories currently possess in order to ensure that the laboratory copes with the problem rather than the need to adapt a problem to cope with the laboratory.

27 February 1998

APPENDIX 64

Supplementary Memorandum Submitted by The Royal Society of Chemistry (C104): Interim Response to the White Paper, The Food Standards Agency: A Force for Change

The Society Welcomes the White Paper

The Royal Society of Chemistry welcomes the White Paper setting out plans to establish a Food Standards Agency.

It is pleased to see that it is the intention for the Agency to be independent of Government and for it operate transparently with freedom to publish the advice it provides. Protection of public health in relation to food must be central to the work of this body, and independent of vested interests. It is important for the Agency to be proactive in seeking new knowledge underpinning scientific understanding of the wide range of issues it will have to deal with.

The Agency and Proportionate Risk

The Society is pleased to see a clear statement recognising that the Agency's decisions and actions should be proportionate to any risk. Many of the issues to be considered by the Agency are likely to depend on emerging and often incomplete scientific evidence. Risk management is central to the way that this information is disseminated and advice provided. Whereas the Agency must ensure that the public has adequate information, the management of complex and conflicting information is a key to "consumer confidence".

We believe that those with a responsibility to disseminate such information should receive the widest possible advice not only from scientists but those with expertise in risk management. There should be investment to develop, where appropriate, a better understanding of the specific issues which distinguish food risk management from that in other areas, eg, the chemicals industries. Education is undoubtedly a major role for the Agency. We believe that there must be a clearly developed structure for food education, and the importance of this subject at all levels must be reinforced through the National Curriculum.

The Vital Need for Research into Food Safety

The Agency will rely on good and up-to-date scientific evidence to determine the advice it provides. The scientific brief for the Agency is very broad and current knowledge in most of the areas listed in the White Paper is still incomplete. Research will be commissioned either in response to a new situation, eg, when an unexpected problem comes to light, or as part of a strategic research programme. Whilst the Agency must have a substantial resource for "fire-fighting" it is equally important for there to be a programme of strategic research to ensure that our pool of experts to whom we can turn for scientific advice is not depleted further. This type of research had been part of the strategic research programmes sponsored by MAFF in the past.

The very wide scientific brief of the Agency means it must have a substantial research budget well in excess of any amount suggested in the White Paper—which does not seem to recognise the superficial scientific understanding that we have of many of the areas which will be the responsibility of the Agency. The Agency will also need a strategy to obtain the required information through national and international effort which will have to be worked out. The interactions outlined in the White Paper appear to be naive and not costed.

Current Patterns of Food Research

Food research is currently funded by BBSRC, mainly through the Food Chain Directorate which has very limited funds available for a broad range of activity. Other research councils, eg, EPSRC tend to redirect food related research grant applications to BBSRC. In general, BBSRC has tended to favour research in the areas of molecular biology related to food. Whilst we are pleased to see that the Agency will aim to provide a link to BBSRC's research programme, it is in the interests of the Agency to ensure that greater emphasis is given by BBSRC to food research and that this be given a slant which aims to address real issues concerned with food standards. Our view is that the BBSRC food research budget should be increased to reflect the importance of this discipline so as to provide high level basic science support for research programmes funded directly by the Agency.

The Public Analyst Service

The Public Analyst Service plays a key role in the enforcement of regulations. Together with the Local Authorities, the Service has considerable experience of local issues in the monitoring of compliance.

There is a substantial body of expertise in chemical analysis and excellent facilities. Whilst a review of the way the Service operates is timely, the society believes that the Service should be recognised for its considerable strengths, and must play a major role in supporting the work of the Agency on a local geographical basis.

Other Centres of Excellence: The LGC and the CSL

The Laboratory of the Government Chemist and the Central Science Laboratory both have state-of-the-art facilities and trained personnel to carry out research into food analysis and surveillance. They are also best able to promote good practice within the analytical services providers. The White Paper makes no reference to this national resource or its planned role in supporting the Agency.

The Microbiological Safety of Food

The Society endorses the prominence given to microbiological food safety as an area where significant improvement is still possible. We would, however, emphasise that whilst there is considerable public concern in this aspect of food safety, the steps which are required to restore "public confidence" are not necessarily those which are consistent with making food safer. We are pleased to see that the White Paper recognises that there has to be a compromise between acceptable risk and the cost of achieving maximum theoretical safety.

It is envisaged that research into the microbiological safety of food will occupy a major place in the Agency's research programme. However, the Society is concerned that our national capability in delivering research in mainstream food microbiology is becoming strained with fewer graduates entering this field. We would encourage the Government to examine the provision of university education in this important area of food science.

Food Additives

Research into the safety of food additives, and their interactions within the food matrix, has been neglected for many years. In the 1960's, the UK was recognised internationally for its imaginative and perceptive research programmes in this area. The concepts which emerged are important to the fate of contaminants and residues of post-harvest treatment agents. We encourage the Agency to undertake a comprehensive programme of research into the chemical interactions of additives with the food matrix, using modern techniques to provide cost-effective screening.

NUTRITION

The Society is pleased to see the Agency taking responsibility for providing a broad function with respect to nutrition and the nutritional quality of food. From the description in the White Paper it appears that the Agency will become the main body for the commissioning of food and diet research, because the areas of responsibility are considerable. We are, therefore, surprised that the White Paper does not elaborate further the extent of the funding of this research or interactions with other funding bodies. For example will the Medical Research Council fund such research? Will the BBSRC fund it? These are questions yet to be resolved.

20 February 1998

APPENDIX 65

Memorandum submitted by Anglian Water Services Ltd (C106)

Thank you for your invitation to submit information about the application of sewage sludge to land.

We are keen for this issue to be the subject of informed debate to ensure that the outcome addresses the long terms needs of both our customers and the environment.

In recycling sludge to land we comply fully with the Sludge (Use in Agriculture) Regulations and Code of Practice, a framework established to ensure the safe recycling of sludge to agriculture. It put in place proven barriers to prevent transmission of pathogens into the food chain. We are confident that, working within this framework, and in the continuing absence of any cases of illness in the general population as a consequence of sludge recycling, our operation is safe.

The public is concerned, for understandable reasons, about the recycling of sewage sludge. We do not take risks with public health and we cannot afford to be perceived as a company that takes such risks. We are planning to treat sludge to higher standards, over and above the requirements of the existing regulations, and these plans are part of our Cost of Quality submission in the run-up to the next periodic review.

BACKGROUND

In the Anglian region we serve 5.5 million people producing some 130,000 tonnes dry solids/year. We produce between 60–70 grammes of dry sludge solids per person per day. This is removed from the plant as a liquid at around 100 gallons per person per year. Most of this is handled as a liquid product. We recycle 80 per cent of sludge production to agriculture.

Our use of farmland is a result of the geography of our region. East Anglia is a rural area, with many small scattered communities and few large towns. We operate 1,075 sewage treatment works 60 per cent of which serve populations of less than 1,000.

Sewage sludge has been recycled to farmland for as long as sewage has been treated. Indeed, the first sewage treatment facilities were sewage farms on the outskirts of larger towns.

Sludge is a product of sewage treatment. A little over half of the production derives from the "primary" treatment settlement processes. It consists of the heavier organic material that is discharged to sewer. The other half is the organic residue of the "secondary" biological treatment processes.

The stricter the discharge standards that sewage treatment works are required to achieve, the greater the volume of sludge produced. The result of the higher standards demanded by the Urban Wastewater Treatment Directive, for discharges to rivers and coastal waters, will be an increase in the volume of sludge to be recycled of some 15 per cent.

Recycling to agriculture is the accepted Best Practical Environmental Option, a view that has been supported by an independent audit commissioned by Anglian Water's Board Environment Committee. We are happy to provide you with copies of this report. Where sludge is recycled to agriculture it provides significant benefits. It replaces chemical fertilisers as sources of nitrogen and phosphorus, provides a useful range of trace nutrients and contains organic matter that is particularly valuable in improving the moisture retention properties of light soils. As a liquid product the water content is also useful in dry periods.

Sludge can be treated before being recycled. In the Anglian Region some 40 per cent of product going to agriculture is treated by one of the approved processes in the Code of Practice for Agricultural Use of Sewage Sludge. We treat product in the West and South of our region where the combination of population density and farming practice demands treated products. Treatment has the benefits of reducing the volume of the material to be handled and substantially reducing pathogen load. However, it has the disadvantage of requiring centralised treatment facilities with the consequent transport environmental impacts. Treatment also reduces the value of the product as a source of organic matter as there is a 50 per cent reduction of this material during treatment.

Untreated products are dealt with according to the Regulations. They are always injected into the soil and are never applied onto growing crops. The Regulations demand a 10 month gap between a sludge injection and the planting of sensitive crops; in practice because of crop rotations the gap is very much larger.

It is important to recognise that sewage sludge forms a small fraction (some 3 per cent) of organic imputs to agriculture. Industrial waste, which is not as closely monitored, is estimated to provide another 3 per cent. The remainder making up some 94 per cent of organic inputs is farm waste, manures and slurries. In any one year sewage sludge is applied to less than 1 per cent of agricultural land in our Region.

FOOD CHAIN CONCERNS

There are two areas of concern, metal and pathogen content. Concentrations of metals in sludges have been falling for many years as a result of better trade effluent control and changing manufacturing processes. We are now in the position where application rates are limited not by metal content but by limits on nutrient inputs to the soil. Current soil limits are set at levels which protect both the soil and the food chain.

Pathogen concentrations are reduced through the sewage treatment process but significant concentrations appear in sludges. This is recognised in the barriers to transmission imposed by the Sludge (Use in Agriculture) Regulations 1989. The regulations provide for an interval between sludge application and the harvest of vulnerable crops. This gives time for soil processes to eliminate risk of disease transmission.

Reassurance is given in the Royal Commission's 1997 Report on Sustainable Use of Soil where it noted that in all the years of sludge recycling, there have been no instances in the UK in which a link has been established between the controlled application of sewage sludge to land and disease in the general population.

However, we recognise that the situation is not static and that we need constantly to review the safety of our operations. In this context we are keen to see the early publication of the DETR's review of the evidence on which the 1989 Regulations were based and their review of the risks in the light of more recent health concerns.

While we believe that scientific evidence continues to support our assertion that our current practices are safe, we recognise that public confidence is likely to be the determining issue, as a result we are planning to invest in treatments to ensure the future of the recycling operation.

To develop appropriate standards we are part of the Water Industry group that is working with the British Retail Consortium to develop a protocol or Code of Practice for the safe recycling of this valuable material to agriculture. The protocol will, we believe, provide the public reassurance that will ensure the future of the operation. We believe the output from this working group will find a wider application in establishing standards for all organic inputs to agriculture.

Our main Cost of Quality submission to OFWAT would take account of the current uncertainities surrounding the agricultural route. In that submission we proposed a reduction in the proportion of product directed to agriculture from the current position of 80 per cent to agriculture to one of 50 per cent by 2005. All of this would be pasteurised product.

CONCLUSION

The recycling of organic matter to farmland is the best environmental option, but we also acknowledge that public perceptions and concerns play an important part in the maintenance of consumer confidence. It is important that we all do what we can to ensure that we maintain this recycling route. All recycling operations should be subject to uniform controls which protect the food chain and provide public reassurance that human health is not being put at risk.

26 February 1998

APPENDIX 66

Supplementary Memorandum submitted by the British Medical Association (C108)

INTRODUCTION

The BMA is grateful for the opportunity to comment on the proposals for the establishment of the Food Standards Agency and commends the Government for the intention to improve food standards, the commitment to openness and the attempt to separate consumer and commercial interests. We strongly support the White paper and the proposals to introduce an Agency capable of considering all aspects of food safety and standards and be equipped with statutory powers to take action anywhere in the food chain, "from the plough to the plate".

THE AGENCY'S GUIDING PRINCIPLES

Guiding Principle 1

The Agency should be concerned with the promotion as well as the protection of public health. In order to play a significant role in the protection of public health it must be fully and actively involved in both the promotion of healthy eating and thereby the prevention of food and nutrition related disease. With the emergency of functional foods developed as nutritional aids, it is important that the Agency is able to take account of wider public health considerations and fully assess their efficacy.

This guiding principle should therefore be amended to ensure that the Agency is concerned with the promotion as well as the protection of public health.

Guiding Principle 2

As a potentially effective force in public health advocacy, complementing the progress towards preventative medicine, the Agency's activity in the field of nutrition and healthy eating is essential. The guiding principles should therefore detail its role in relation to nutrition and the promotion of healthy eating.

Guiding Principle 3

The Association strongly believes that the Agency's paramount consideration should be the public health costs and benefits; the public health costs of not taking action should always be a consideration in the activities of the Agency.

The responsibility to consider the implications of the Agency's policies for the food industry should rest with the Ministry of Agriculture Fisheries and Food; such considerations should not impede progress towards higher standards of food safety and the dissemination of quality nutritional advice.

Guiding Principle 4

It is important that the proposed Agency incorporates an effective role in public health advocacy and must therefore operate openly and be independent of ministerial control. The Agency should have the freedom to publish the advice that it offers to ministers and be required to act in accordance with the proposed Freedom of Information bill in order to ensure that the public remain as well informed and confident about food safety and nutrition issues. This would complement the Agency's commitment to open and transparent decision making.

Guiding Principle 5

The Agency should be required to ensure that the acquisition of detailed professional public health advice is an inherent part of the process of consultation on all issues.

WHAT THE AGENCY SHOULD DO

Nutrition

Whilst we support the initiative to improve food safety, the BMA is keen to emphasise the importance of nutrition in relation to food policy. As many of the major causes of morbidity and mortality are related to poor diet we would hope that the proposed structure will lay equal emphasis on the promotion of nutrition and healthy eating.

We accept that the new Agency should work in conjunction with the Departments of Health, Environment and Agriculture in relation to nutrition and should represent the UK in international negotiations on issues relating to the nutritional aspects of food. The Department of Health however should retain ultimate responsibility for adapting nutritional advice into policy and for issuing national guidance to assist with the prevention of chronic disease.

Public Information and Education

The BMA supports the proposed remit of the Agency, to be responsible for providing information to the public, schools, and also health professionals on all matters relating to food safety and nutrition. It should play a decisive role in co-ordinating the activities of all ministries, departments and the Health Education Authority in a national strategy for developing and providing such information.

Research

The Agency should act as a single reference point for research on all food related matters. It should commission research, liaise with all external major researchers in the UK and publish its own research strategy.

Food Law Enforcement

The BMA supports the proposal that the Agency should seek to ensure the effectiveness of local authority enforcement action rather than take overall responsibility. The Agency could best undertake this surveillance by co-ordinating, monitoring and auditing local authority enforcement activities. Where, however, a Local Authority is considered to be failing to take appropriate action, the Agency should have powers to act directly. This may entail a review of the Food Safety Act 1990 and the Food Safety (Northern Ireland) Order 1991 to ensure that the Agency is able to exercise these powers effectively.

THE AGENCY'S ROLE IN FOOD SAFETY

Food Safety on the Farm

In order to ensure that the Agency is able to effectively promote food safety throughout the whole of the food chain, it will be necessary to provide the Agency with operational responsibility for both farming practices and control measures at all stages of the food chain, including on the farm. The Government should therefore give careful consideration to defining the final level of control that the Agency will have over other bodies, notably the agricultural departments, the Pesticides Safety Directorate and the Veterinary Medicines Directorate.

In the absence of a consensus of expert opinion from the various ministries and departments, the Agency should have the power to enforce a controlled decision which may affect farms and intermediate industries such as, inter alia, slaughterhouses, rendering or processing plants and food storage plants.

Food Borne Illness

The BMA would support the proposal that the PHLS's core funding should not be routed through the Agency. However, the relationship between the Agency and the PHLS should ensure that Agency Directives on the surveillance of food safety matters will take priority over other matters should circumstances require this to be so.

Novel Foods and Processes

We would support the proposal that the Agency be developed to become the principal UK competent authority for assessing novel food applications and in protecting the public in relation to food additives.

Other Areas

We note that issues such as animal welfare or environmental policy will not be a primary focus of the Agency, we would however contend that it will be essential for the proposed Agency to liaise with the Environment Agency on issues such as outbreaks of domestic illness caused by microbiologically contaminated water supplies from sewage effluent or processing plants etc. Defined operational and strategic links with the Environment Agency would therefore be valuable.

THE AGENCY'S ROLE IN FOOD STANDARDS AND NUTRITION

Education is an integral part of the process of encouraging healthy eating; it may produce changes in understanding, ways of thinking, beliefs and attitudes and enable the acquisition of skills. Importantly, it may generate changes in individual behaviour and lifestyle, thereby facilitating improvements in the wider socio-economical environment which ultimately influence health. Despite the publication in the United Kingdom of numerous major reports on diet and health over the past 20 years, the level of public knowledge in relation to diet and healthy eating remains inadequate. Comprehensive practical national dietary goals for the population are therefore urgently required and should be developed jointly between the Department of Health and the proposed Agency.

Food Standards

We would agree with the proposal that the Agency should take over responsibility for food standards including compositional standards, labelling requirements and food authenticity. Consumers have a right to be properly informed about the content and quality of the food they purchase and to be confident that they will not be misled as a result of inadequate, inaccurate or fraudulent information given by producers, manufacturers or retailers.

The Agency should provide readily intelligible, scientifically based advice detailing the nutritional content of foods, ensuring the consumer safety and providing authoritative unbiased information. The Advisory Committee on medical aspects of food and nutrition policy (COMA) in practical terms should be serviced jointly by the Agency and the Department of Health and it is important that these two organisations should not be separated in terms of their advice to ministers. The arrangements for the remit of the Agency with regard to nutrition would appear to be practicable and importantly, will enable the Health Department to retain certain essential responsibilities.

THE AGENCY'S STRUCTURE AND ACCOUNTABILITY

The Form and Composition of the Agency

Members of the Food Standards Agency should represent individuals with wide public interest background and without any specific affiliation directly to the food industry. The Agency's public health focus should be reflected in the appointment of the commissioners and in the staff of the Agency. Public Health physicians therefore should be included in sufficient numbers.

In practical terms it is acceptable that the commissioners will take expert advice from the already established network of independent advisory committees but the commissioners must be free to seek expert help from any organisation with a professional interest in food standards and safety. This would include university research departments and voluntary organisations. We would agree that a formal separation between the commission and the Agency's executive is inappropriate and that the Agency should be a legal entity.

With regard to mechanisms for accountability, the Agency should report to Health Ministers though the Minister of Public Health and should also be accountable to the cross departmental public health Cabinet Committee. It is crucial however that the Agency will be free to make public its advice to ministers, who would then be responsible for explaining any decision not to accept expert advice. It would be appropriate for the staff of the Agency to be accountable to the commission and arrangements for an interchange of staff to take place with departments, for example of public health doctors and veterinarians is welcome.

CONCLUSION

There is still much confusion amongst the public over what constitutes a safe and healthy diet and much can be done to assist the public by developing a statutory labelling system that provides clear information about the fat, sugar, salt and fibre content of all foods in addition to carbohydrates and proteins. In addition there are may challenges ahead for the Food Standards Agency in dealing with a whole range of current and potential food standards and quality issues.

Consumers need to be confident that foodstuffs purchased have been produced to the highest standards, contain no harmful additives or toxic contaminants and are stored correctly prior to consumption. The Agency will be responsible for delivering such reassurance. Substances and processes already in use should be systematically reviewed and those which do not meet all safety and standards criteria should be prohibited.

All stages of the food production process need to be considered in relation to food safety including methods of food preservation. Apart from high quality surveillance of foods for microbiological safety the Agency will need to meet the challenge presented by the increasing use of genetically modified organisms in biotechnology processes. Similarly, the Agency should examine the effectiveness and role of pesticide safety directorate which is far from ideal in meeting the desired criteria of independence, freedom of information, rigorous research and monitoring regarding the still substantive use of pesticides in the UK. The Agency will need to take on an ongoing brief for the control of environmental contaminants such as dioxins and heavy metals which continue to pose a risk for human health from the essential foods that we eat.

26 February 1998

APPENDIX 67

Supplementary Memorandum submitted by the National Office of Animal Health Limited (C109)

Thank you for your letter of 16th January inviting us to add to the written evidence sent to you on 17th October. We are very pleased to do this, and to meet your deadline of 27th February. However, as the actual deadline for response to the White Paper is not until mid March, we are only able to give you some key points. We will be pleased to send you a copy of our detailed response when it is complete. In the meantime, we are able to say that the principles and sentiments expressed in our previous submission have not changed.

In particular we would repeat five points made in our earlier submission:

1. That in setting up the Agency consideration must first be given to whether the challenge is a genuine problem of *food safety*, or rather one of *public confidence*. Notwithstanding recent high profile incidents, we believe that British food *is safe* and the Agency should be geared to restoring confidence rather than imposing more burdens on an already over-regulated, beleaguered industry.

2. Any actions planned should first take account of *existing* controls, which we believe are—in the animal medicines sector at least—already highly effective and on a par with, or already exceed, those in the rest of EU and elsewhere.

3. The *purpose* of Animal Medicines should not be forgotten—to control and prevent disease and animal suffering and to ensure that our food comes from healthy animals. In short concern over *risks* should not be allowed to overshadow the *benefits* of animal medicines and should not damage medicine availability.

4. UK is part of EU and a signatory to the World Trade Organisation, British farmers and food producers operate in a highly competitive, international, market. The powers and actions of the FSA must not be allowed to undermine the competitiveness. At the same time any controls imposed on UK food production *must* be equally applied to food imported from elsewhere.

5. That all decisions should be *science based*, not subject to unpredictable change to appease the latest "fashion or passion" or for political expediency.

Turning to specific aspects of the White Paper:

A. *The future of the Veterinary Medicines Directorate (VMD)*

In our earlier submission we commented on the value of the VMD in its present form and expressed concern that, in the "James Report", it was proposed to split its work with "safety" moving to the FSA and other aspects of licensing remaining with VMD as an agency of MAFF. We were not alone in this concern, and so are delighted that Government has heeded the voice of many different organisations, and decided that the VMD should remain intact, and part of MAFF (Section 4.23 to 4.32). This was a logical and practical decision which we trust will be carried through into the final Act of Parliament.

B. *Relationship between FSA and VMD/VPC*

Within this general support for the Government's proposals, we are concerned about the detail of section 4.29. This sets out the involvement of FSA with the Veterinary Medicines Licensing processes and can be interpreted at two quite separate levels:

(i) It has been suggested that the procedures detailed here simply restate those already in place and used over the last 30 years: MAFF, DoH and territorial Ministers jointly acting as the Licensing Authority, advised by VPC with scientific and administrative input from VMD aided by specialist oversight/input from outside bodies such as HSE and Environment Agency. Health Ministers *already* have (and always have had) the ability "as members of the Licensing Authority to block an application if they consider on the basis of advice . . . that the product posed an unacceptable risk". We know of no evidence to support the implied criticism that Ministers have previously failed to fulfil their moral and legal obligation to protect public health.

(ii) However study of the proposals shows that the FSA will be granted additional undemocratic, and previously unheard of, powers. FSA will have the right to:

- appoint its own member to VPC (in addition to observers);
- appoint a "Scientific Liaison Officer" to "help set the agenda", be "involved in the briefing process"; and
- appoint a member to the VMD Ownership Board "to ensure that *it* (FSA) is fully represented when advice for Ministers is prepared.

All these innovations will put FSA in a position which is far stronger than any other agency and, in part, *usurps the powers of Ministers* (and thus of Parliament) by being given the power of *patronage*—to appoint members of Advisory Committees and Ownership Boards.

However the newest and most unusual power proposed for the Agency appears in 4.32, where it will have the very unusual and significant licence to make public any concerns it had about the Government's decisions and actions on pesticide, and Veterinary Medicine". As the White Paper says "This freedom to publish its views will give it considerable influence in its dealing with PSD and VMD"—we would add—"and Ministers"—The FSA will be given the role of the playground sneak—"do it my way or I'll tell".

As things stand at present there appears to be no plans to give similar freedom of speech to the VMD or VPC—will FSA thus be able to conduct a one-sided campaign against those who, for excellent reasons, feel unable to accede to its demands but are legally prevented from defending themselves in public?

These proposed powers of FSA need to be very carefully reconsidered to ensure that they can be subjected to democratic control and accountability and are fair to all those who work in other Agencies and serve on Advisory Committees.

Too Wide a remit?

In our response to the James Report, and in our submission to the Agriculture Committee last October, we warmly welcomed the proposal to create the Food Standards Agency as a means to restoring public confidence in food—in our view this is still the single most important role of the Agency.

It is because we want the Agency to succeed that we share the concerns of those who fear it has been given too wide a role. As highlighted above, the Agency will have very great powers to intervene in the work of other Departments "in the Public Interest". This remit should be limited to food safety and to being science based. Opinion related areas, subject to changes in public or medical fashion—such as 'quality', "Wholesomeness", "Nutrition" should be clearly and deliberately excluded from its activities. It is equally important, if the new Agency is to maintain public respect and trust, that the lesson of recent experience is learned—so that the Agency's role is limited to giving clear advice to allow an informed Public to make their own decisions (rather than banning items such as bone-in beef or green top milk).

We welcome Government's decision not to give the agency all the widest powers proposed by Professor James. Nevertheless we note with some concern that, if proposal 4.11 is adopted, even Cabinet Ministers can be over-ridden by the Agency: "If the Agriculture Departments were unable or unwilling to use the Animal Health Act powers, the Agency could take the matter forward . . . Agriculture Departments would not be able to prevent the Agency from taking action".

While we appreciate that the original James Report (and the Lang/Millstone paper on which it is based) was written in opposition by a group highly critical of the previous Government, we are surprised to find that this White Paper continues to imply that neither Ministers, nor existing Government Departments, can be trusted to act in good faith.

Financing the Agency (Chapter 8)

The White Paper is unclear about how much the Agency and its work will cost:

3.32 —"total annual research funding of about £25m is to be transferred to the Agency (from MAFF)

8.9 —"in excess of £100 millions—of this about £35m is currently recovered through charges to industry

8.10 —"Current Local Authority expenditure—is estimated at £120–£150m

8.12 "the agency's work to raise standards may lead to a need for greater expenditure or who will pay for it":

8.14 "the production costs associated with meeting these standards already fall to industry . . . but the great majority of central and local government costs are *currently* borne out of the public purse" . . .

8.15 "The Government believes that the food industry should bear the bulk of the costs of improving food safety and standards . . . passing on a greater part of the costs of food safety work directly to the food industry . . . likely to be passed on to the consumer".

8.17 ". . . shifting the burden of cost away from the taxpayer".

All this points to a total bill in excess of £250 million collected from the consumer via the retail food industry. However, 8.19 refers only to £60 million being raised—by a flat rate fee of £100 paid by 600,000 food retail premises.

Private advice from officials indicates that the Government wishes to move all agencies on to a "Full Cost Recovery" basis, implying that to recover £250 million the fee is likely to rise to about £420 per outlet—a figure which would be a great burden to many small shops, particularly in rural areas. Clearly any system of charges would have to be related to the size of the business.

We hope the Committee finds these interim comments of help. To summarise, we welcome the creation of the FSA which:

- Should concentrate on restoring public confidence.
- Should build on the long history of effective, science based controls.
- Should limit and focus its activities to ensure it retains public respect and trust.
- Should be subject to proper democratic controls and *not* usurp the powers of Ministers or Parliament.

- Should not impose unnecessary costs on UK's hard pressed food and farming sector, but should seek to ensure that competitiveness is protected.
- Should take account of the *benefits* of essential farm inputs such as animal medicines, and not be driven solely by alleged risks.

As indicated in our previous submission, we would be very pleased to give oral evidence if this would be helpful.

27 February 1998

APPENDIX 68

Supplementary Memorandum submitted by the Chilled Food Association (C110)

Thank you for the invitation to add to the evidence we have already submitted to the Committee for its current enquiry into food safety.

We welcome the publication of the White Paper "The Food Standards Agency—a Force For Change" and support the majority of the proposals it contains. Our comments reflect the food safety focus of the Chilled Food Association.

Aims

Uniquely, CFA was established to promote and maintain excellence and safety in the production, distribution and sale of chilled food products. Food safety is the prime objective of the Association. Unlike other trade associations, CFA's brief is horizontal in nature and it encompasses the control of products and processes across many industries.

CFA welcomes the establishment of a Food Standards Agency with the same aims and similar Guiding Principles as it is only through consumer confidence in food safety that our industry can continue to grow. CFA members contribute significantly to the UK economy, directly employing more than 23,000 people at 90 sites in the UK, many in rural areas.

Responsibility

Food safety begins in the field with the production of raw materials, the quality of which determines that of the final product. This important principle applies to all raw materials, whether sourced from the UK or abroad.

We are pleased that the White Paper recognises our earlier submissions on the importance of taking a holistic approach to the environment, agriculture and food safety. However, we are very concerned that there are gaps in the proposed responsibility of the Agency, in particular on the critical area of the effect on the environment on food safety. By this we refer especially to the control of the use and management of organic waste and its impact on the safety of crops, livestock and water. The requirements of the Food Safety Act 1990 should be applied to those supplying such materials to the food industry.

We are pleased that the Agency will have a role in co-ordinating food safety research. We seek to ensure that it has a particular remit to set the priorities for research and identify areas of omission, in order for appropriate research to be commissioned. Again, the issue of the impact of the environment on food safety is not being researched sufficiently, and this needs to be addressed as a matter of priority.

We have two further points which need to be addressed:

1. We would like data from publicly funded work carried out by now privatised organisations such as ADAS to be fully available to the Agency and the public. Information that was once public should be available at no charge to the public. Agency information should also be freely available to the public.
2. The Agency should have a clear role in addressing matters such as the performance of domestic refrigerators. This has traditionally been a matter for the DTI, but, since its focus is not food safety, the issue has not been addressed. We recommend that the Agency assumes responsibility for this area.

ENFORCEMENT AND REGULATIONS

Regulations need to be clear and enforceable and must be applied equitably across Europe. We have two immediate examples where attention is required by the Agency:

1. *Mandatory Food Hygiene Training*

Food hygiene training should be mandatory for all food handlers and it should be on the National Curriculum as a core subject.

2. *Water Quality*

Water is an important raw material. Current legislation needs to define the word "potable" such that food safety is not compromised. We seek action by the Agency to ensure that all water supplies by law comply with defined safety and quality standards.

MEASURE OF SUCCESS

The success of the Agency must be seen to be measured to ensure consumer trust and confidence in its work. Key Performance Indicators must be related to objectives and be included in the Agency's annual report. The main indicator should be achievement of a significant reduction of the number of food poisoning cases in the UK.

LICENSING

CFA believes that all food premises, including farms, should be licensed to operate on the basis of compliance with minimum hygiene standards and HACCP-based controls, such as those set out in the CFA Guidelines. This has not been brought about by the Food Safety Act 1990. Licensing should be applied equally to imported and UK-produced raw materials and foods. We believe that compliance with operational standards is more important than the level of fee.

STRUCTURE AND REPRESENTATION

CFA bases its standards for the hygienic production of chilled foods on the best scientific advice and welcomes the same approach being taken by the Agency. We believe that, for the Agency to function successfully and to be objective, its structure should comprise representatives from chilled food industry scientists and technologists. Chilled foods are at the leading edge of the food industry and CFA has a unique contribution that must be recognised if the Agency is to achieve its aims. As an indicator of the level of expertise in the industry, our Members directly employ 700 scientists, and an estimated further 1,000 are employed in group support and suppliers to CFA Members.

We hope that our comments are helpful and assist in ensuring that the key issues are addressed. We would be happy to provide further information if required and would be please to make available the scientific expertise within the Association to contribute to the success of the Agency.

27 February 1998

APPENDIX 69

Supplementary Memorandum submitted by the Local Authorities Co-ordinating Body on Food and Trading Standards (LACOTS) (C111)

1. LACOTS welcomes the further opportunity given by the Agriculture Committee to provide additional evidence in the light of the proposals detailed in the recently published White Paper *The Food Standards Agency: A Force for Change.*

2. LACOTS is very pleased with the White Paper's far reaching proposals, in particular the Government's view that food law enforcement benefits from local knowledge and that local authorities should therefore retain their current enforcement responsibilities. We note that Government is not at this stage putting forward any proposals regading the future role of LACOTS but we would hope that Government would fairly consider the benefits of LACOTS continuing in its existing role, notwithstanding that the Agency might expect a more formal relationship between itself and local government's own enforcement co-ordinating body.

3. We hope that in our written and oral evidence the Committee has seen the benefits of LACOTS as an integral part of the food law enforcement process. LACOTS has very successfully promoted a number of enforcement co-ordination strategies that promote best practice. It has published many significant detailed guidance documents as well as specific advice on legal queries and has worked with both trade and consumers

as well as Government to ensure consistency of enforcement. LACOTS has also provided an expert and consensus local government voice on enforcement matters to central Government. A good example has been the detailed responses it has provided based on chief officers', managers' and practitioners' perceptions of the recently introduced Beef Bones Regulations. These responses should help ensure the guidance issued by Government helps authorities recognise clearly their responsibilities and ensure they can enforce the legislation in an appropriate manner.

4. LACOTS welcomes the further discussions proposed regarding financing of the Agency and the indication that these discussions will include consideration of matters regarding possible licensing schemes. LACOTS believes Government should take this significant opportunity with the creation of the Agency to introduce a thorough and effective licensing scheme. It could add a significant degree of additional public protection by ensuring all food businesses at the outset comply with legislation and have appropriate management systems in place to provide safe food with appropriately trained management and staff. Licensing should also be seen as a further useful mechanism to ensure a level playing field between businesses and a very important enforcement tool to deal with rogue traders.

5. Professor James in his interim proposal recognised that part of the confidence building process would include the Agency having a different culture of operation when compared to the perceptions of existing Government departments. Whilst LACOTS recognises it is essential that the Agency has appropriate expertise and that this will be provided in part by transferring existing staff from Government departments, it is essential that outside appointments are also made to positions throughout the Agency's organisation. It is also essential that strategies and policies are developed and promoted openly to ensure any staff transferred recognise the important change in the culture of operation anticipated with the creation of a new Agency. The guiding principles of openness, transparency and consultation must be central to all the Agency's actions and work.

6. It is essential that the Agency also works in partnership with all the relevant interested parties and that, wherever possible, issues are addressed collectively rather than with parties individually. It has been LACOTS' experience that bringing together at the outset representatives of enforcers, the trade and consumers, with guidance and possibly leadership from the centre (at the moment Government and in the future, hopefully, the Agency), is the most effective way of dealing with issues to the satisfaction of all parties.

26 February 1998

APPENDIX 70

Supplementary Memorandum submitted by the United Kingdom Federation of Milk Producer Organisations (C112)

SUMMARY

The Federation welcomes the publication of the White Paper. In particular, the publication of a set of guiding principles by which the Agency can be judged and which includes the need for the Agency to operate on the best scientific advice and in an open, transparent and consultative manner is fully supported.

It is desirable that the Agency is involved in all matters that affect public health, from what happens on the farm to what happens in the home. Matters affecting animal health and welfare should be tackled jointly with MAFF.

Where there is a clear risk to human health, such as food contamination, then it is right that the Agency should have executive powers. However, evaluating the consequences of risk assessments should remain with the Department of Health. Matters of policy formulation and legislation should remain with Ministers and their Departments.

The Agency's role in developing compositional standards, improving product labelling and overseeing the verification of health claims is important but must not detract from the Agency's role in improving food safety. In doing this work the Agency will be required to evaluate the nutritional and dietary importance of individual foods. The Federation believes, however, that determining what a healthy diet is, and the relationship between nutrition and health should be the responsibility of an independent body reporting to the Ministry of Health, such as the Committee on Medical Aspects of Health and Nutrition Policy (COMA). The Department of Health should be responsible for actioning the result of COMAs deliberations, through bodies such as the Health Education Council.

It would seem reasonable that the Agency should be able to charge where services are provided. However, the only way to ensure credible independence is for the majority of the funding to be from the taxpayer.

In the appointment of the Agency's Commissioners, due account should be taken of practical experience in the food and farming industry, including the dairy industry. Consultation is important; the Agency's corporate and business plans should be subject to a consultation process so that the Agency's priorities can be properly assessed.

INTRODUCTION

The United Kingdom Federation of Milk Producer Organisations has commented on the consultative document on the setting up of the Food Standards Agency (June 1997).

At that time the Federation welcomed the setting up of an Agency that would be responsible for food safety and standards in respect of public health.

The Federation argued that the Agency should have responsibility for ensuring food law was consistently enforced; ensuring food safety in all matters affecting public health; playing a co-ordinating role in dealing with outbreaks of food-related disease; conducting research and communicating the results and recommendations of its work. The Federation also believed that the Agency should have a co-ordinating role in animal health and welfare standards. But the Federation argued that for the Agency to have responsibility for dietary and nutritional matters would detract from its main purpose of ensuring food safety. The Federation also thought that the Agency should be advisory, reporting to the Minister for Health who would be responsible for drafting legislation, and be run by a Government appointed "Commission", and be named the Food Safety Agency.

The Agency, as set out in the "White Paper", will:

- be responsible for food safety;
- report through the Ministry of Health and have advisory powers, and be run by a Commission;
- have an input into animal welfare matters, as far as these affect human health; and
- have a responsibility for food standards, labelling, diet and nutrition.

The "White Paper" therefore goes beyond what the Federation thought advisable in covering food standards, diet and nutrition as well as food safety.

GUIDING PRINCIPLES

The UKMFPO welcomes the publication of guiding principles by which the Agency must operate, and by which the Agency will be held accountable to Parliament and the public. Because milk is one of the basic foods of the nation, the way in which the Agency operates will have important implications for the businesses of the Federation's members.

In particular, the Federation welcomes the acknowledgement that the essential aim of the Agency will be the protection of public health and that, in its operations, it will utilise the best scientific advice and operate in an open, transparent and consultative manner.

The need to consult with, and operate closely with the food industry is especially important in matters relating to food standards and in improving standards of food safety generally. Standards must be consistent with European Union law and must not discriminate unfairly against domestic food producers.

It is also important for the Agency's credibility that it is seen as the source of independent scientific advice.

THE AGENCY'S ROLE IN FOOD SAFETY

The White Paper states that "Food safety will be at the heart of the Agency's responsibilities".

The Federation welcomes the Agency's involvement from what happens on the farm to what happens in the home.

There can be little argument with the Agency being involved in all aspects of farming practice which impinge on human health, including involvement with veterinary medicines, farm surveillance and animal feedingstuffs. The Agency should provide scientific advice but MAFF should be responsible for any action that needs to be taken on the farm except where food safety is a clear issue. It does, however, seem stange that while the Dairy Hygiene Inspectorate will be responsible to the Agency in England and Wales, in Scotland local authorities will continue to be responsible. It is to be hoped that both will operate to the same standards. There is an argument that the Agency should contract and pay for services, with bodies such as the Dairy Hygiene Inspectorate being independent.

The Agency should only operate in areas where there is a mandate in legislation. Where there is a clear danger to public health and where there is clear legislation ie in cases of food contamination, it is right that the Agency should take action on its own account. However, weighing up the consequences of risk assessments based, for instance on new scientific evidence, is essentially a judgement which must remain in the hands of the Ministers for Health. Responsibility for policy formulation and legislation must be retained by Ministers and their Departments.

FOOD STANDARDS AND NUTRITION

Food safety must be a priority for the Agency.

The Federation would have preferred the Agency not to have a role in nutrition, believing that this would detract from its main purpose in ensuring food safety. That view still stands.

The Federation argues that the Agency's role should be limited to those aspects of nutrition that are related to labelling and food standards, and can be based on clear scientific evidence, such as:

- the scientific assessment of the nutritional importance of individual foods; and
- advice on accurate labelling and the verification of health claims.

An independent body, reporting to the Minister of Health, should take the primary role in evaluating and commissioning research into the links between nutrition, diet and health. A revised Committee on Medical Aspects of Health and Nutrition Policy (COMA), could take on this role. This would separate the function of nutrition in terms of labelling and food standards from nutrition in terms of providing information on the diet and health. It would also enable the influence of diet to be considered in relationship to other factors affecting health, rather than as an issue in its own right. COMA would therefore be responsible for:

- assessing what constitutes a healthy diet, and the relationship between diet, nutrition and health;
- monitoring the health of the nation;
- commissioning research;
- providing scientific advice for use by other bodies; and
- publishing advice.

The Department of Health would be responsible for any action resulting from COMA's advice, such as action aimed at improving the health of individuals. For instance, by publishing guidelines for the use of schools, hospitals, the food industry and caterers either on its own account or through bodies such as the Health Education Council. The Department of Health also has a clear responsibility in advice related to medical conditions and for certain vulnerable groups (ie pregnant women, young children).

This would separate the scientific work on nutrition from advice on health (which can be controversial), making the lines of responsibility clearer, and ensuring that diet is seen in the context of other risk factors.

AGENCY STRUCTURE AND ACCOUNTABILITY

In the appointment of the Agency's 13 Commissioners, due account should be taken of practical experience in the food and farming industries, including the dairy industry. The appointment of a Chief Executive with appropriate experience is crucial.

The publication of annual reports, business and corporate plans is to be welcomed. It is to be hoped that by these means there can be an ongoing consultation process on the Agency's priorities.

There is also a need for the Agency to be clearly accountable to Parliament.

FINANCING THE AGENCY

The dairy farmer already pays for the Dairy Hygiene Inspection service through charges for inspection of farms. The Federation can see no reason why this principle should not be extended throughout the food chain. In other words, where a service is provided by the Agency, then it can be argued that a charge can be made.

All businesses in the food chain, whether farmers, processors, importers, caterers or retailers should be treated according to the same principles. In this context there is an argument for small businesses (for instance, not registered for VAT) to be exempt from any charges.

However, it seems unreasonable to expect the farming and food industry to pay for the entire cost of the Agency, particularly as the Agency will not be accountable to the food industry for the way in which money is spent. The Agency should be democratically accountable to the consumer through the Ministry of Health; it would seem only appropriate that the taxpayer should therefore provide the majority of the Agency's funding. This would be the only way to guarantee the Agency's independence.

10 March 1998

APPENDIX 71

Supplementary Memorandum submitted by the Food Safety Advisory Centre (C113)

Further to your letter dated 16 January 1998, I write to add to our original evidence to the Agriculture Committee in the light of the proposals contained in the White Paper "The Food Standards Agency: A Force for Change".

PUBLIC INFORMATION AND EDUCATION

The James Report proposed a strong media and public information role for the Agency including health education on food matters. The White Paper states that the Agency will build on and take over responsibility for food safety communications, activities already developed in MAFF and DH eg Food Safety Information Bulletin, the Consumer Helpline and Food Sense series. Our experience shows that merely putting out statements, circulars etc is insufficient to forge a relationship of trust. Telephonic, visual contact and appearance by the Chairperson of the Agency is fundamentally important. The most important part of my role as Director of the Food Safety Advisory Centre is my ability to talk to the consumer via the telephone and through regular radio and TV programmes as well as through my comprehensive speaking round.

A relationship with the consumer must be built. The Chairperson does not need to be a pure scientist but must enjoy the back-up of a reputable scientific team. His job should be to manage the total process and communicate with the Public. The Agency needs a new identity and must avoid the temptation of using existing MAFF information vehicles such as the Food Safety Information Bulletin as there is evidence that such information sources are distrusted by the general public.

The White Paper states that "Confidence in the new arrangements will only be achieved if the general public has access to information provided by the Agency on its own activities (including the basis for its decisions and actions and the decision making process itself)"—this information will only be of value to the consumer if it is communicated in a simple but thorough manner and the consumer is not weighed down with jargon and scientific information which may be difficult to assimilate and understand.

Research needs urgently to be undertaken on the views of the consumer in relation to food safety and their information needs.

Consumers need to feel that they are part of the decision-making process with regard to the food they buy and consume. Currently, they have an opportunity to interact with their retailer or if highly motivated they will write to the manufacturer. However, many consumers would welcome the opportunity of communicating with the scientific panels directly particularly the Food Advisory Committee. The Agency needs to build a channel of communication for this.

The Commission is to take clear responsibility for the operations of the Agency. However the White Paper states that the day-to-day operational matters will be delegated to the Chief Executive. There is little information as to the appointment and the responsibilities of such a person except that he/she will not be a Crown Office holder. We believe that this approach is fundamentally flawed and an independent Chief Executive should be appointed thereby giving him flexibility and independence. Very careful consideration is needed with regard to this appointment whose remit seems to be pivotal in the operation of the Agency.

With regard to the Meat Hygiene Service remaining a separate entity, with its own Chief Executive, from the Agency, how will a conflict of interest be resolved between the two bodies?

ACCOUNTABILITY

The Agency's ability to be free to make public its advice to Ministers is essential to maintain the independence of the Agency. We, at the Food Safety Advisory Centre, found such a freedom invaluable, particularly as we were able to make statements independent of our sponsors which in some instances, although not deliberate, were in conflict with their commercial interest for example on the issue of irradiation. This added to our credibility as an organisation.

The Agency must be seen to deal quickly and efficiently with short time crises in order to gain the confidence of the public and needs therefore to develop strong links with the media. Failure to do so would result in the Agency occupying the same position in the public regard as the MAFF currently holds.

26 February 1998

APPENDIX 72

Supplementary Memorandum submitted by J Sainsbury plc (C114)

J Sainsbury plc welcomes the establishment of the Food Standards Agency and its focus on food safety, food standards and nutrition.

We will be letting the Government have our comments on the White Paper's proposals in March and will provide a copy of these comments to the Select Committee in due course.

In the meantime, we wish to let the Committee have our initial views on the most controversial part of the White Paper—how the Agency will be funded. Our concerns are two-fold:

1. A CONFUSION BETWEEN THE ROLES OF GOVERNMENT AND INDUSTRY

We believe tax payer's money should be spent to fund the Agency's activity. The Health and Safety Commission in the UK—which has long been seen as an appropriate model for the FSA to follow—is fully publicly funded. This is also true of the Food and Drug Administration in the USA.

It would be quite inappropriate for the Government to fund the public costs of food safety from industry. We seek an early undertaking from the Government that they will not reduce the amount of public money currently being spent on food safety.

In simple terms, we believe the role of Government is to (i) create an appropriate regulatory environment and (ii) to fund its effective implementation and enforcement. The role of the food industry is to meet the obligation under the Food Safety Act to sell safe food.

2. WHAT WILL BE THE ADDED VALUE FOR OUR CUSTOMERS?

We invest millions of pounds in delivering safe food to our customers. These costs are built in to the costs of running our business successfully. If we are to pay additional amounts specifically for securing safer food for consumers generally, then we wish to know what benefits our customers will get in return for the extra costs to our business.

The Government has not clarified exactly what the Agency's additional activities will be. Nor has it identified how it will add value to the current arrangements, in particular, current enforcement arrangements. In our experience, the quality of enforcement practice is very patchy and in need of much improvement.

If we are to help pay for the Agency, then the least we can expect is to know how our money is to be spent. Will it be spent on better enforcement? If so, what changes will be made to ensure that the competence of those who enforce food regulations will be improved and what improvements will be made to the structure of enforcement to ensure greater consistency? Changes are necessary in this area if enforcement arrangements generally are to play a more effective role in restoring public confidence in British food.

We hope that these initial comments are helpful to the Committee.

26 February 1998

APPENDIX 73

Supplementary Memorandum submitted by the Consumers' Association (C115)

INTRODUCTION

Consumers' Association welcomes this opportunity to submit additional written evidence to the Agriculture Committee following the publication of the White Paper on the Food Standards Agency. We are very supportive of the model proposed for the Agency and intend to respond in detail to the Government to this effect. We will provide our full response to the Agriculture Committee when it has been finalised. However, we would also like to take this opportunity to set out our views to the Committee on how the Agency will address many of the problems outlined in our original evidence, and in a few minor instances, explain areas where we consider measures need to be included or changed to ensure that the Agency achieves its full potential.

In general, however, we consider that the Agency provides a framework for ensuring that food issues are handled effectively in the UK and that consumers can once again have confidence in the food supply. The establishment of the Agency can not be expected to produce instant results, but it can begin to tackle many of the weaknesses of the current system and ensure food safety and the quality of the UK's diet improves in the longer term.

SCOPE

We fully support the proposal for the powerful Food Standards Agency as set out in the White Paper with public health "unequivocally as its first priority". We consider it essential that the Agency has powers to take action throughout the food chain, from "plough to plate". Repeated food safety problems have shown that it is essential to have effective controls at all stages of the chain if we are to see any improvement in standards. We particularly welcome the inclusion of nutrition within the remit of the Agency and this is discussed in more detail below. It is essential that the Agency works at arms' length from government and that it operates in an open and transparent manner.

THE AGENCY'S GUIDING PRINCIPLES

It is essential that the overriding aim of the Agency is to protect and promote public health. The Agency must be able to base its decisions on independent scientific evidence and research, and it must have the ability to commission such research when necessary. It must be independent of all interests.

It will be important that when considering the costs as well as the benefits of taking action, the Agency also considers the public health implications of not taking action. It will be essential that the Agency develops effective mechanisms for assessing risk and dealing with the problem of scientific uncertainity in the future.

The BSE crisis is an example of a failure to take a sufficiently precautionary approach. As a result, both the public health costs, the costs to the tax payer and the costs to the industry have been enormous. The Agency will therefore often need to take a precautionary approach as the long-term benefits may outweigh the short-term costs. We are concerned, however, that this requirement should not lead to the Agency having to take responsibility for political decisions about economic impacts, which should remain the responsibility of Ministers.

The Agency will have a crucial role in providing clear information and advice to consumers to enable them to make healthy and safe choices when selecting and preparing food. If consumers are to have confidence in the Agency's decisions, it must operate openly and transparently. In the past, as our survey work has demonstrated, consumers have felt that decisions have been made behind closed doors and this has led to suspicion that economic interests have taken priority.

Functions

We fully support the proposal in the White Paper that the Agency should take over responsibility from the Agriculture and Health Departments for advising Ministers on the UK policy framework in the areas of food safety and standards, including nutrition. It is essential that the Agency has executive as well as advisory powers so that it can take action when necessary.

Public Information and Education

One of the advantages of the Agency will be that it will be able to provide a single, independent, authoritative source of advice on all food issues and will help prevent confusing and mixed messages about food. A culture of openness and transparency, and its independence from sectoral interests, should ensure that it provides information that consumers can trust. It is important that scientific information and risks associated with food are communicated in a way that the public can understand and which enables them to make informed food choices. We support the proposals outlined for the Agency to establish its own communications strategy and to have its own dedicated Communications Unit. Advice and health warnings should be regularly reiterated so that consumers know when to avoid, and how to handle, potentially high risk foods.

The Agency will also have the advantage of being able to put all risks associated with food in to context, providing information about how to choose a healthy, nutritious diet, as well as ensuring that food poisoning is avoided. The lack of reliable and trustworthy information about new technologies, such as genetic modification should be resolved. It will also be important that the Agency works closely with the Department for Education and Employment (DfEE) to ensure that this information is understood early in life.

Research and Surveillance

The Agency must be able to commission research into links between diet and health when it is needed. It must be pro-active and be able to take a long-term view of future research needs. It is also important that the independence of this research can be ensured. Where research that has been funded by industry is used as the basis of decision-making, it must be made clear that vested interests have been involved.

It will also be essential that the Agency develops adequate and effective methods of risk assessment that acknowledge the need for a multi-disciplinary approach and develops mechanisms for dealing with scientific uncertainty, so that we are never faced with another BSE crisis.

Food Law Enforcement

Effective and consistent enforcement of food legislation is essential if consumers are to have safe food and clear information that we can rely on. We therefore fully support the role that is proposed for the Agency in relation to enforcement. It is important that the Agency can over-see enforcement which we consider should remain at a local level. By monitoring local authorities' performance and carrying out audits to ensure that legislation is applied and enforced consistently, consumers should be ensured a high quality service.

It is important that the Agency has powers to step in and take over from an authority where it is not fulfilling its role adequately or where it is in the national interest. We also consider that the Agency should step in and take over enforcement where the cost of taking action ie a prosecution, is beyond the resources of the local authority. Similarly, the practicalities of the Agency taking over the role of Home Authority should be considered as we are aware that this additional responsibility can cause problems for small authorities with limited resources.

It is now well established that the application of Hazard Analysis Critical Control Point (HACCP) throughout the food chain is the most effective way of improving food safety. The Agency will have an important role, together with local authorities, ensuring that food handlers are educated about its application at all stages of the food chain.

For local authorities to carry out their functions effectively, it is essential that they have adequate funding. We were disappointed that the White Paper concluded that ring-fencing of local authority funding for food law enforcement was unnecessary. We consider that this is essential in order to ensure that this money is not subsumed by other local authority work. Additional funding has recently been provided, for example, for enforcement of recommendations made by the Pennington Group. It is important that this money is used to ensure that Ecoli 0157 is controlled, however, it will be left to local authority discretion to decide where this money is most appropriately spent. A system of ring-fencing has been introduced in Northern Ireland for implementation of food safety regulations since 1990. This has worked well, and it is proposed that this should continue. We consider it essential that ring-fencing is introduced throughout the UK.

As we indicated in our previous evidence, we consider that licensing of food premises, rather than the current system of registration, would ensure that food premises have to reach a minimum standard before they can start selling food to the public. This is discussed further under "Funding" below.

FOOD SAFETY

It is essential that the Agency has powers to take action in the interests of food safety throughout the food chain. It is only by taking this holistic approach that we can start to see some improvements in food safety. Close liaison with the Ministry of Agriculture, Fisheries and Food (MAFF) which will retain responsibility for farming practices and animal welfare, for example, will be essential if there is to be a co-ordinated approach. But if the Ministry fails to take the necessary action in the interests of public health, the Agency must be able to use its powers to carry out research and surveillance on farm, and when necessary, to present legislation for approval by the Secretary of State for Health. Although the Agency will not have responsibility for operational issues on farm in most cases, it will still be important that it retains some expertise in this area within its Executive to ensure that it can effectively monitor the adequacy or potential consequences of measures introduced by MAFF.

We were encouraged by the requirement that the Agency will have responsibility for developing and implementing a national policy and strategy on the control of food borne zoonoses throughout the food chain, working closely with other relevant departments, and taking farming practices in to consideration. We also welcome the move to establish a joint Agency/Agriculture Departments Committee to co-ordinate on-farm surveillance and control of live animals. However, it is essential that the Agency has powers to carry out on farm surveillance and implement controls without the agreement of the Agriculture Departments if it considers such action necessary to protect or promote public health.

We were concerned by the proposal to share the Secretariat for the Spongiform Encephalopathy Advisory Committee (SEAC) equally between MAFF, the Department of Health (DH) and the Agency. Whilst the work of the Committee clearly has implications for all three, we consider that in view of the fact that the majority of its work originates from, or is concerned with, problems of food safety, the Food Standards Agency should take the lead on the Secretariat. The main priority of SEAC should be the protection of public health. Sharing responsibility between the three departments could easily result in the same conflict of interest that was at the heart of the BSE crisis. MAFF's primary role will be industry promotion. It should therefore have a lesser role in relation to SEAC than the Agency.

As the quality of animal feedingstuffs is vital to ensure food safety further up the food chain, it is important that the Agency has powers in this area. We also support the Government's proposal to implement the advice of the Lamming Committee and create an independent advisory committee on animal feedingstuffs, and to have consumer representation on this from the outset.

It may not always be obvious whether or not a measure has implications for public health. The Agency must therefore have the ability to commission its own research, to initiate surveillance of animal feedingstuffs and to use its powers under the Food Safety Act to respond if there is a food safety problem.

PESTICIDES AND VETERINARY MEDICINES

In our response to the James report we suggested that the benefits of transferring the entire work of the Veterinary Medicines Directorate and Pesticides Safety Directorate over to the Agency be considered. We do therefore have some concerns about the possible conflict of interest that could result by leaving these agencies entirely with MAFF. They both have important food safety implications and therefore it will be very important if the model that is proposed is adopted, that the Agency does have powers to closely monitor their work and to take its own action when necessary. In addition it is important that it can veto the authorisation of specific products if there are concerns for public health. It should also be able to initiate changes to Government policy on their use when necessary, for example, in relation to the use of antibiotics as growth promoters. We plan to respond in more detail on this issue in our response to the White Paper.

FOOD HYGIENE

The Agency should take over responsibility for all aspects of food hygiene policy on the microbiological safety of food. This should help to ensure effective implementation of HACCP throughout the food chain. It will also be important for the Agency to ensure that any legislation, or other action is taken when it is necessary to protect public. In the past, we have been concerned about the failure to implement Advisory Committee on the Microbiological Safety of Food (ACMSF) recommendations. Implementation of the recommendations of the Pennington Group has also made slow progress. With the ACMSF reporting to the Agency, it will be responsible for implementing the Committee's advice. In addition its role of overseeing local authority enforcement activity, provides the opportunity for much greater co-ordination of food hygiene matters which we consider will help to ensure an improvement in standards.

MEAT AND MILK HYGIENE

With the Meat Hygiene Service reporting to the Agency, rather than to MAFF, it will be ensured that its main function will be the protection of public health, which it will be able to do with greater independence. We support the proposal that the Agency will also formulate policy and advise on legislation on meat hygiene standards, transmission of BSE throughout the human food chain, licensing of fresh meat plants and approval of meat products and meat preparation plants. It should also help to ensure a changing emphasis across the meat industry that recognises the importance of HACCP principles.

FOOD-BORNE ILLNESS

The role proposed for the Agency should help ensure that there is far greater co-ordination in the handling of food poisoning outbreaks, and that we begin to gain a clearer picture of the main causes of food poisoning. It should co-ordinate surveillance and also keep abreast of any developments abroad. We agree that it is essential that the Agency works closely with the Public Health Laboratory Service. On-going dialogue between the Central Veterinary Laboratory and the Agency's Veterinary Public Health Unit will also be essential for ensuring that the Agency can effectively act from "plough to plate".

We welcome the decision to introduce measures that ensure surveillance can be undertaken across the whole of the food chain without requiring the consent of businesses which are to be surveyed. This should enable the Agency to have a much clearer picture of problems that exist throughout the food chain.

We also consider it important that the Agency has default powers to step in where local management of an outbreak is not effective.

NOVEL FOODS AND PROCESSES

We agree that the Agency should become the UK competent authority for assessing novel food applications; be responsible for licensing and inspecting food irradiation facilities; take over the Agriculture Ministers' responsibilities for issuing consents under the Deliberate Release Regulations for GMOs intended for food and animal feed; and provide the secretariat to the ACNFP.

Genetically modified organisms, novel foods and processes was one of the four main areas of concern Professor James identified in his report. Developments in this area have caused a great deal of public concern. We were, however, disappointed that the White Paper apparently fails to acknowledge the complexity of the situation and does not appear to directly address some of the concerns that we raised in our initial evidence. The Novel Foods Regulation is mentioned, but the White Paper does not make reference to the deficiencies of this regulation ie it does not make provision for long-term monitoring of genetically modified foods post-marketing, it does not cover processing aids, and it fails to provide consumers with meaningful information about which foods are genetically modified.

We welcome the requirement for the Agency to develop a policy on the control of novel foods and processes and play an active role in the development of EU controls. This policy must address the problems that we have seen over the last few years as genetically modifed foods have been introduced on the UK market. The Agency should also review the remit and membership of the relevant advisory committees to ensure that no issues fall through any gaps. The policy must also introduce methods of gauging public attitudes towards novel foods and processes before they go on the market so that we are not again faced with the situation that foods are on sale before regulations are in place to adequately cover them. The policy should also acknowledge consumers' needs to make an informed choice and base its requirements on what consumers feel is necessary rather than what scientists consider is an appropriate amount of information.

The Agency should commission research to underpin the safety assessment of novel foods, but it should also be able to commission research in to public attitudes and understanding of novel foods. Provision of information and advice will be a very important function of the Agency which it should be able to do far more effectively as it will no longer feel torn between its responsibility to promote biotechnology on behalf of the food industry and to give clear information to consumers. This should mean that consumers can have government information that addresses their real concerns.

It has been very clear over the last few years that different countries—including those within the EU—take very different approaches to novel foods as well as to food irradiation. In view of the problems we are currently faced with in detecting the presence of genetically modified foods, particularly in commodity crops, it is essential that the Agency plays an active role in moves towards international harmonisation of safety assessment procedures for novel foods. It should also have a specific responsibility for the development of validated scientific test methods to ensure that claims about genetically modified foods can be substantiated, and that if there should be a safety problem in the future, the foodstuffs that are affected can be quickly withdrawn from the market. More generally, we consider that the Agency should develop methods for more effectively involving consumers in its decision-making procedures. This is an issue that is not only relevant to novel foods.

Nutrition

Diet-related diseases, such as cancers, heart disease and stroke still remain the major killers in the UK. With an Agency committed to ensuring that consumers are given clear information about how to eat healthily, if they choose to do so, and that mechanisms are in place to enable them to access such a diet, we should begin to see improvements, some of which are set out as priorities within the Green Paper "Our Healthier Nation".

Research carried out by Consumers' Association[10] clearly demonstrates that consumers want the Government to provide them with clearer information about what constitutes a healthy diet. 80 per cent of respondents agreed that the Government should give advice about healthy eating. When asked what the remit of the Food Standards Agency should be:

- 85 per cent said that the Agency should "give practical advice on what's good for health";
- 93 per cent said that it should "look in to the links between food and health";
- 93 per cent said that it should "help improve school meals, meals on wheels and hospital meals by setting standards";
- 95 per cent said that it should "agree standards for food labelling"; and
- 98 per cent said that it should "make sure that claims on packaging are true".

These results show overwhelming support for the inclusion of nutrition within the remit of the Agency.

Any advice on nutrition has implications for the food industry as it can determine whether or not consumers choose to buy more or less of a product or of a product category. It is therefore essential that nutrition issues are handled within the open and transparent culture of the Agency where public health is the over-riding priority. The Agency must also be able to carry out and commission research to ensure that research that is needed in the interests of public health is done independently of commercial pressures.

As the survey findings above show, consumers are confused by food labels. Many complex health claims are now made on products and consumers want them to be controlled. They also want the information, including nutrition labelling to be made clearer and for it to be easier to compare between different products and brands when shopping for food.

Policy on labelling needs to be done in the context of the Government's overall nutrition policy. Similarly, it is difficult to separate nutrition from many other food issues that fall within the remit of the Agency because they are so inter-related. The introduction of genetically modified foods or other novel foods and additives on to the market, for example, could have nutritional implications for our diets. It is therefore important that the Agency is able to consider nutrition within its broader policy framework.

The Agency will have a key role providing advice on food to consumers and health professionals. With its broad remit, covering nutrition and food quality, as well as food safety, the Agency will be able to put its advice in the context of the overall diet. Consumers want clear information about what they should be eating and this can only be done effectively if the Agency can give this advice within the context of more immediate food scares as well as a poor diet in the longer-term.

The Agency's Structure and Accountability

We consider it essential that the Agency has executive as well as advisory powers, as explained in our policy report *"A National Food Agency"* and in our response to Professor James's report. Both of these have already been submitted as evidence to the Committee.

We also consider it to be essential that the Agency's Commission is comprised of relevant expertise, and that the majority of appointments should come from a wider public interest background. Members of the Commission should be appointed on the basis of their knowledge and expertise, they should not be there because they represent a particular organisation or sector. A full declaration of interests and any previous affiliations will be essential and the Commissioners should be appointed according to Nolan principles.

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[10] A telephone survey of 456 people was carried out between 9–12 January 1998.

The Agency should report to the Secretary of State for Health. As proposed by Professor James, the establishment of a Select Committee on Food should be considered as the Agriculture and Health Committees will no longer adequately reflect the broad remit of the Food Standards Agency.

OPENNESS AND TRANSPARENCY

It will be very important that the Agency publishes the advice that it gives to Ministers. This will ensure that Ministers have to justify any decisions to reject the Agency's advice. In addition, the culture of the Agency must reflect this new open and transparent approach. The minutes of meetings of the Commission and of the expert advisory committees should, for example, be published.

CONSUMER REPRESENTATION

It is essential that the Agency develops effective mechanisms for involving consumers within its decision-making. It is important that the Agency is able to effectively gauge consumer concerns and attitudes to developments within the food chain. Consumer representation will also help to ensure that the Agency addresses the issues of concern to consumers, communicates its advice and decisions in a user-friendly, as well as an open and transparent manner, and does not lose sight of its essential aim.

SCOTLAND, WALES AND NORTHERN IRELAND

We consider that one of the main benefits of the Agency is that it will be able to provide greater co-ordination in the way that food issues are handled. It is therefore important that the Agency is a UK agency. There will however be issues that are unique to Scotland, Wales or Northern Ireland. We therefore support the proposal to ensure that these are effectively addressed by the establishment of advisory committees. It will be important that the whole of the UK can benefit from any experiences or problems that initially appear regional as they may also have implications for the rest of the population, as indeed was the case with the Lanarkshire *E coli* outbreaks.

FUNDING

As we stated in our response to Professor James's report, we consider that the Agency should be funded by taxation, and that this should be set out by a separate vote within the Department of Health's budget. In the White Paper, the Government has put forward proposals for transferring some of the costs on to the food industry by means of a system of licensing or registration. CA has called for the introduction of a licensing system for some time, and were disappointed when the present system of registration was introduced instead. This has proved to be little more than an administrative exercise. Licensing, however, would ensure that all food premises have to reach a minimum standard of food safety before they can sell food to the public.

We will be responding in more detail on the issue of funding in our response to the White Paper. Using a licensing system as a mechanism for raising additional funds for the work of the Agency is one possible way forward.

INTERNATIONAL AND EUROPEAN NEGOTIATIONS

As decisions about food safety are increasingly made at European and even global level by Codex Alimentarius, the Agency's involvement will be crucial. A copy of Consumers' Association's response to the Green Paper on General Principles of EU Food Law was enclosed with our initial evidence. The same principles that have guided the establishment of the Food Standards Agency should also be recognised at European level. It will therefore be important for staff of the Agency to work closely with DGXXIV which has responsibility for Consumer Affairs, as well as DGVI (Agriculture) and DGIII (Industry) which have retained responsibility for drafting of food legislation following the Commission's recent restructuring. We have concerns about the lack of consumer representation within Codex Alimentarius, which sets international food standards, and the principles that form the basis of its decision-making. Codex standards have become increasingly important for the settlement of international trade disputes, and ultimately could decide the level of protection European consumers can expect. We therefore welcome the expectation in the White Paper that the Agency will seek to increase the transparency of Codex work and encourage the participation of consumer representatives.

27 February 1998

APPENDIX 74

Supplementary Memorandum submitted by the Provision Trade Federation (C117)

The Provision Trade Federation welcomes the opportunity to add to the evidence we submitted earlier.

While we have yet to complete our submission to MAFF, our preliminary views on the White Paper are as follows:

1. PTF continues to endorse the objectives and aims of the proposed Food Standards Agency and the principle that consumer safety should come before the interests of the industry. However, we still have reservations about whether the new Agency will improve upon the existing system.

2. As a paper exercise, it is hard to find fault with much of the content of the White Paper; but it is hard to judge the likely effectiveness of the Agency as proposed until it is up and running. However, there are some areas of principle which are worthy of further detailed consideration and research before the Bill is drawn up.

3. The funding of the Agency has been the subject of considerable debate since the White Paper was published. The Government has declared its determination that more of the costs of food safety enforcement and regulation should be borne by the industry. If this policy is adopted to finance the proposed Agency there is a danger that it could be treated as an open cheque to be drawn upon whenever the Agency Commission decides that some extra work is required. Currently, there is a finite budget and the only way extra funding could be provided for the work associated with food standards and safety is by increasing taxation or by transferring funds from elsewhere. In the latter case a decision has to be taken on whether food safety is more important than other areas and this acts as a control. This Government made a commitment not to increase taxation, but if industry is required to pay for the Food Standards Agency and the costs are allowed to escalate, these will be passed on to the consumer and therefore be tantamount to a hidden tax. This would be unacceptable particularly under a Government which prides itself on openness and transparency.

If the Government is determined to fund part of the Agency's work by means of a levy on industry, there must be a strict measure built in to ensure both that the costs are kept to a pre-determined limit which does not amount to a hidden tax and that the costs of raising such funds are proportionate. The White Paper mentions that if every food premises were required to pay £100, this would raise £60,000,000. This is almost as much as the total cost of existing activities under MAFF and the Department of Health. It would be hard to justify such an increase without an assessment of the actual costs required for running the Agency. This should be done before deciding how the Agency should be financed. Moreover, the costs of collecting any funds should be itemised. The wider the net is cast for contribution to the fund, the higher the costs.

4. PTF is opposed to a system of licensing to replace the current registration system for food premises because of the unnecessary bureaucracy and attendant costs involved. If the Environmental Health departments are sufficiently resourced and efficiently run they should be able to prioritise their inspection programmes to concentrate more on the areas of greatest risk and if necessary to close down premises which do not meet the required standards. This could be done on the day a new business opens, without a licensing scheme. Licensing would inevitably lead to delays in openings of new premises if there is a backlog. As most new premises already reach the required standards their owners would be unfairly penalised if they could not start work on the planned date.

5. PTF welcomes the commitment in the "Guiding Principles" outlined in the White Paper that the Agency should act independently of specific sectoral interests. We assume that the term "sectoral interest" embraces not just the food industry but also the various interests which work against particular sectors of the food industry eg the anti-meat lobby. It is important that the members of the Commission should be perceived by all interests including industry as having the expertise, knowledge and objectivity which the role implies.

6. PTF questions the workability of the proposal for the Agency to have the responsibility for representing the UK at working level in negotiations in the EU and other international forums. We believe that this should come under the direct control of a Government Department. The White Paper proposes that the Minister will have the final say on policy in such negotiations. In practice, if Agency advice was not accepted by the Minister concerned on any particular issue, the effectiveness of the Agency negotiators in Brussels or elsewhere would be undermined by the fact that there would be two policies in the public domain—the Minister's and the Agency's which will be published. This could weaken the UK's position in negotiations, particularly if the Agency's view, but not the Minister's, coincides with that of a significant proportion of the other parties involved.

7. PTF welcomes the proposal that the Agency should co-ordinate, monitor and audit the work of local authority enforcement activities provided that this aspect of the Agency work is funded by central or local Government.

27 February 1998

APPENDIX 75

Supplementary Memorandum submitted by Greenpeace (C118)

SUMMARY

1. Professor Philip James' report highlighted genetically modified (GM) foods as one of the four major areas of concern, but the White Paper pays GM foods scant attention.

2. The White Paper fails completely to propose any innovations in the decision-making processes for GM foods.

3. The Food Standards Agency will inherit precisely the same machinery presently operated by MAFF to regulate GM foods. This displays a complete misunderstanding of the nature of the challenges posed by GM foods to the regulatory system.

4. Whilst the commitments to openness, transparency and a desire to exclude vested interests are welcome, they will not deal with the risk dimensions to food policy, especially in connection with GM foods.

5. Given this situation, Greenpeace believes that the Food Standards Agency will fail in its aim of restoring public confidence in the nation's food if it does not recognise the failure of current regulatory mechanisms for dealing with risk issues.

6. GM food regulation presently excludes "big picture" questions, like "is genetically modified food necessary?", "is genetically modified food actually wanted?", "is the wholesale move to genetically modified food—now in prospect—the right direction for long-term food policy?". It appears from the White Paper that the Government will continue to wear blinkers.

7. There is no recognition at all in the White Paper that certain food risks are quite avoidable and that these should be avoided because they are not needed, not wanted by consumers, and are not manageable once let into the system.

8. There is little understanding of the relationship between risk makers and risk takers in the food chain. When the beneficiaries of food risks (eg biotechnology companies) are not those who will bear the risk (the consumer) there is a much greater need for justification and demonstration that the risk brings some societal benefit. Hence a different regulatory framework is required to carry public confidence.

9. The White Paper mistakenly addresses risk problems largely as, first, a technical matter, and secondly a public communication problem. But it is mistaken to suppose that public evaluation of food risks can be "educated out" as it is completely rational not to want to be exposed to a statistically-small involuntary risk if it is avoidable and if the downside is severe. If the risk-taker stands to gain no benefit from the risk the position is all the more reasonable.

10. The White Paper wrongly treats assessment of risk as if it is mainly reducible to a numerical exercise. Even at the most technical level, the significance of a risk will often by viewed quite differently depending on the background of the "experts" concerned with the assessments. With complex risks like genetically modified organisms, every level of consideration of the risk involves value-based judgements as well as purely technical concerns.

11. The White Paper is wrong to insist that Food Standards Agency responsibilities should not extend to environmental policy. Genetically modified foods pose unprecedented threats to the environment. To safeguard consumers from GM food risks necessitates that the Food Standards Agency can ensure that the wider environemnt is not subjected to genetic pollution.

CONTEXT

Professor Philip James' Food Standards Agency report highlighted genetically modified (GM) foods as one of the four major areas of concern the Food Standards Agency will have to contend with.

Greenpeace's submission to the Government consultation on Professor James' paper focused on the risks posed by GM foods.

It indicated that, in order to succeed in restoring much-needed public trust and confidence, Food Standards Agency proposals must include:

1. How to make decisions about unpredictable risks like GM foods where science is inevitably uncertain.
2. Framing the debate widely enough to include social and cultural valuations of the risk and to include the "big picture" questions about GM foods—like "is genetically modified food necessary?"
3. Recognition of the inherent unmanageability of GM food risks and therefore an approach to GM food predicated on risk avoidance.
4. Recognition of the importance of environmental considerations in food policy and therefore a sufficiently "upstream" mandate for the Agency to safeguard agriculture and the environment from genetically modified organisms.

The present regulatory systems have failed, and continue to fail all of these tests, which, it should be noted, are equally applicable to many other types of food risk.

GENETICALLY MODIFIED FOODS: OUT-OF-SIGHT, OUT-OF-MIND?

It is striking that the White Paper pays scant attention to GM foods. In his statement to Parliament introducing the Food Standards Agency White Paper, The Minister for Agriculture, Fisheries and Food makes no reference at all to GM foods.

Despite the pressing need for a forward-looking approach to tackle this increasingly prominent issue, the White Paper fails completely to propose any innovations in the decision-making processes for GM foods.

The Food Standards Agency will inherit precisely the same machinery presently operated by MAFF, with no modifications to the flawed and inadequate advisory committee structures. The implication is that the only problem with GM food regulation is a potential conflict of interest within MAFF, and that the only required change is separation of powers. This attitude is a complete misunderstanding of the nature of the challenges posed by GM foods to the regulatory system.

The White Paper gives the impression that because a major GM food crisis has not yet arisen in the UK then nothing can be wrong with the way the system is handling GM foods. This ignores serious warning signs.[11]

It appears from the White Paper that the Government intends to continue to wear blinkers whenever it views genetically modified foods. The GM food issue is presently mis-framed by regulators so as to exclude all "big picture" questions. No consideration is given to the consequences of continuing to exclude questions like "is genetically modified food necessary?", "is genetically modified food actually wanted?", "is the wholesale move to genetically modified food—now in prospect—the right direction for long-term food policy?". Instead there is a "taken-for-granted" assumption that this trajectory to food policy, agricultural policy and environmental policy is correct.

This blinkered approach to food regulation has proved fatally flawed with the BSE-nvCJD crisis where it failed to foresee or pre-empt the health risks, or the social risks, or the financial risks, or the political risks.

The regulatory system had no means to ask questions about whether industrial agriculture could or should justify the introduction of practices which, when uncovered, proved to be anathema to society at large. These justifications should have been required. If they had been, the extent of the risks of a BSE crisis might have been foreseen, and a view taken that these risks weren't needed and that they weren't worth running.

The GM food advisory committees have no remit or mandate to consider these or other types of "big picture" questions, so they don't. Neither do they have the necessary breadth of insight, expertise or representation to do so with any credibility. Their case-by-case analyses of proposed GM crops and foods, however necessary, omits to step back and make any assessment of what is an appropriate medium or long-term trajectory to food policy, or even to consider whether approval of an individual case should be refused because of its precedent-setting importance.

This is not to say that inclusion of public interest representatives on advisory committees is not desirable, nor that it should not be extended—it should be. The point is that it is high time to recognise that these issues are simply too big to be shuffled off to a committee in a back room whose membership is defined by a narrow perspective of "expertise", however valid that expertise may be for certain detailed technical points.

In official terms, these bigger picture issues should be dealt with by Parliament. Yet when in the creation of the regulatory framework and structures were these questions adequately debated in Parliament? Who agreed and who disagreed with the Government line? In fact value judgements affecting these big picture questions have been made behind closed doors by bureaucrats, without any public scrutiny.

It is to be welcomed that the Food Standards Agency Commission will have a majority of public and consumer interests, but there is no indication in the White Paper how the Commission might be better enabled to open these "big picture" questions than the present regulatory authorities.

CONTINUED NAIVETE ABOUT SCIENTIFICALLY UNCERTAIN RISK EVEN AFTER BSE

The White Paper is very disappointing in its failure to recognise the need for a culture shift towards risk avoidance when dealing with risks with "difficult" characteristics: ie high scientific uncertainty, low scientific predictability, long latency times, irreversibility, widespread impact, severe or catastrophic potential, and involuntary risk exposure. These risk characteristics are inevitably associated with proposed GM foods.

The White Paper perpetuates the pretence, remarkably, in light of recent food scares with these risk characteristics, that such risks are manageable once in the food chain. Essentially it proposes that more of the same old approach to risk will solve any incipient problems. But if the risk culture does not change then the same old mistakes will continue to be made, allowing risks into the food chain which could and should be avoided.

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[11] See for example, Genetic Engineering: Too Good To Go Wrong?, Greenpeace 1997, for examples of unexpected adverse consequences, including the large-scale crisis in the USA around the L-tryptophan food supplement where genetically modified bacteria were implicated. For indications of potential public/political backlash see Uncertain World: Genetically Modified Organisms, Food and Public Attitudes in Britain, Centre for the Study of Environmental Change, Lancaster University in association with Unilever, 1997.

The specific structural changes with regard to regulation of GM foods, as already noted, amount to no meaningful change at all, just a twiddling at the edges. The language in the White Paper gives just as little encouragement that the risk culture will significantly change.

Whilst it is notable that the White Paper does give consideration to risk, in general it displays an out-of-date view of how to approach "difficult" risks. Many of the White Paper's messages about how the Food Standards Agency will handle risk are mixed.

The White Paper discussion of risk displays four major faults:

1. There is no recognition at all that certain food risks are quite avoidable and that these should be avoided because they are not needed, not wanted by consumers, and are not manageable once let into the system.

The White Paper misses the point with its statement that "complete freedom from risk is an unattainable goal". Whilst this is self-evidently true, the White Paper goes on to state that food safety and wholesomeness can therefore be related to other risks in everyday life. This is a deeply problematic assumption where a risk can be avoided. Even if a risk is statistically small, if the downside is potentially dreadful, then as the reaction to BSE has clearly shown, consumers want a system that avoids it.

The White Paper makes a welcome explicit recognition that "where there are uncertainties about the scientific evidence, an element of political judgement is inevitably involved".

But this passage then notes that "lack of full scientific certainty should not be used as a reason for postponing cost effective measures to reduce health risks". Whilst this may appear to be a precautionary statement, it is not. It fails in two respects. First, it refers only to risk reduction not elimination, a presumption of risk manageability rather than risk avoidance which is inappropriate to many types of food risk with high levels of uncertainty. Second, it presumes "cost effective" measures are identifiable even when the science is uncertain. This is a self-contradictory caveat which provides a let-out, particularly for industry interests. This concern is reinforced by the placing of industry before consumers in the wording of a subsequent section on weighing "costs and benefits". It should be noted that many risk avoidance actions—eg exclusion of antibiotic marker genes in food crops would not cost anything to the tax payer, nor as in this case, necessarily be a cost to industry; and this particular instance could save money to the health service.

2. There is little understanding of the relationship between risk makers and risk takers in the food chain and that this is a political, not a technical matter.

"Responsible food producers, retailers and caterers already regard their customers' safety as an ethical and commercial priority" says the White Paper. But this is circular because such a viewpoint is exactly what defines those that are responsible. The most major problems arise from businesses who don't see a coincidence between their commercial interest and customer safety. Monsanto is force-feeding European consumers its GM soya because it sees it—rightly or wrongly—as being in its commercial interest to do so. Unilever and others are now backing them by changing products over to GM soya, presumerably for commercial motives. For those people who do not want GM food no amount of scientific evidence makes this acceptable.

When the beneficiaries of food risks (eg biotechnology companies) are not those who will bear the risk (the consumer) there is a much greater need for justification and demonstration that the risk brings some societal benefit. Hence a different regulatory framework is required to carry public confidence.

3. Risk problems are addressed largely as a public communication problem.

Amongst many other mentions, the White Paper notes that the Agency will have "experts in risk communication" and subsume the present Risk Communication Unit.

It is fundamentally mistaken to suppose that public evaluation of food risks can be "educated out" in some manner. It is completely rational not to wish to be exposed to an involuntary risk, even if it is technically assessed as statistically small, if it is quite avoidable and if the downside is very severe. If the risk-taker stands to gain no benefit from the risk the position is all the more reasonable.

It should also be appreciated that the public are keenly aware of the past failures of "experts" to take appropriate precautionary steps. DDT, thalidomide, BSE and many other issues would show that the public are correct in not believing the official view of such risks. Official scientific experts have time-after-time shown that they underestimate the degree of scientific uncertainty associated with their assessment of a risk. The evidence is that outside observers assess the uncertainty more realistically.

With regard to genetically modified foods, if a person does not wish to eat them, that is perfectly rational and sensible. A regulatory system which tries to "educate out" that view rather than legislate to accommodate it will find itself very exposed if and when a problem arises with a GM foodstuff.

4. The assessment of risk is treated as if it is mainly reducible to a numerical exercise.

"Proportionate legislation" and assessment of "costs and benefits" arise repeatedly in the White Paper.

Even at the most technical level, the significance of a risk will often be viewed quite differently depending on the background of the "experts" concerned with the assessments. For example the significance of the risk associated with the transfer of antibiotic resistance genes will be viewed differently by a molecular biologist, compared with a microbiologist, compared to a medical or veterinary practitioner. With complex risks like genetically modified organisms, every level of consideration of the risk involves value-based judgements as well as purely technical concerns. The most basic bias in the system is that, almost whatever their background, those qualified technically to address these issues tend, because of their personal involvement, to start from the presumption that GM food is a good thing.

The issues associated with performing risk assessments and background value judgements have been highlighted by a recent working paper[12] from the industry directorate (DGIII) of the European Commission (not an organisation known for its precautionary approach to environmental issues). Although the paper was discussing chemicals, it is inevitable that the same issues apply to risk assessment of GMOs where the systems being dealt with are even more complex:

"The dominant analytic difficulty inherent to risk assessment is pervasive uncertainty . . . uncertainties during any previous step strongly compromise the reliability of the last phase, the risk characterisation. The exercise does include many choices and judgements by the person performing it . . . Risk assessments themselves can be manipulated so that their results emerge above or below the acceptable value according to an assessor's personal preferences."

In his speech to Parliament Dr Jack Cunningham said that the agency will achieve [confidence] by adopting the best available authoritative scientific advice, by acting in a way that is open, consultative and transparent, and by ensuring that the public has access to intelligible and consistent information about risk". This raises the obvious question of how to define the laudible objective of "best" scientific advice, but there is also a question of how consultation and transparency, also very much to be welcomed, are meshed with that advice. It is essential that these are integral to the process of consideration of scientific advice, and powerfully determine how that advice should be interpreted as a policy decision. The Minister's statement and the White Paper tend to imply that consultation and transparency might be simply a means to smooth the public reception to decisions pre-determined by "expert" advice.

BLIND TO ENVIRONMENTAL ISSUES

The White Paper states twice[13] that the Food Standards Agency responsibilities should not extend to environmental policy.

Food policy and environmental policy are deeply inter-twined. One of the worst features of post-war food policy, in the form of the CAP or otherwise, has been its propagation of environmental devastation. Genetically modified foods pose unprecedented threats to the environment. For a Government proposing to be the "greenest ever", this explicit exclusion of formal linkage between its proposed major food policy body and environmental policy-making displays a rift between environmental rhetoric and commitment.

This linkage also plays in the other direction. To safeguard consumers from GM food risks necessitates that the Food Standards Agency can ensure that the wider environment is not subject to genetic pollution. It must be able, for example, to protect the crops of farmers wishing to grow GM-free food from cross-pollination of transgenes, whether directly from neighbouring transgenic crops, or indirectly via wild crop relatives which have themselves gained a transgene by cross-pollination with a GM crop.

Without authority to consider and act upon these sorts of issues, it is impossible to see how the proposed Food Standards Agency will be able, for example, to ensure any supply of GM free food for consumers who wish to have a choice. This will immediately undermine its attempts to rebuild credibility, trust and confidence in food regulatory structures.

27 February 1998

APPENDIX 76

Supplementary Memorandum submitted by Farming and Livestock Concern (C119)

Thank you for the opportunity to comment. We welcome the White Paper's proposals and also the Government's endorsement of Professor James' recommendation that nutrition should be within the remit of the Food Standards Agency. The Guiding Principles are an excellent foundation for the way in which we hope the Agency will work. It is urgent however that they are put into practice before the FSA is up and running because decisions are being taken now that contravene principles 1–7, and are giving serious cause for concern.

In our submission I drew attention to the importance of an adequate selenium intake to human and animal health (section (2) p.1) and the unacceptably low intake by both humans and farm animals as a result of the widespread selenium deficiency in UK soils. In October 1997 MAFF published the Laboratory of the Government Chemists's analyses of the 1995 Total Diet Study showing yet a further fall in our intake to

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[12] Working paper on Risk Management in the framework of Council Directive 76/769/EEC . . . Doc. 97/RiMa02, DGIII, Brussels.

[13] Sections 4.8, 4.70.

29–39mcg/day, where the Lowest Reference Nutrient Intake is set at 40mcg/d. These results were passed to COMA for their advice and it is COMA's response (Food Surveillance Information Bulletin No 93 Feb 1998) which is worrying.

They stated that: "Current blood measures of whether people have enough selenium are difficult to interpret because of a lack of data relating them to functional outcomes."

They advised that: "Further research should be encouraged to investigate whether the current levels of intake are adequate."

They stated that: "There is currently no evidence of adverse health consequences from current intakes."

The evidence has been accumulating in the literature, particularly in USA since the 1970s; in research papers, conferences, reviews and textbooks. It is well known that the functional outcome of selenium deficiency is a contribution to impaired immune, liver and thyroid operation, to infertility in both male and female, to arthritis and any inflammatory condition where tissue damage is inflicted by free radicals, to cardiovascular disease and various cancers.

A recent study by Larry Clark et al published in the Journal of the American Medical Association 1996; 276: 1957–63 will serve to illustrate. Here it was shown in a 10 year randomised clinical survey of 1,312 persons that an assumed adequate dietary selenium intake was unable to provide protection against a number of cancers. Patients attending a number of clinics for skin cancer were given a 200mcg/day supplement of selenium or a placebo. Their mean plasma blood levels at the start of the trial was 114mcg/litre, considerably above those cited from limited surveys in the UK of 47–51mcg/l (Rayman M. BMJ 1997; 314: 387–88), and above the 100mcg/l considered adequate. Within 6–9 months the selenium supplemented group registered 190mcg/l. The trial was unblinded two years early, mainly because although there was no effect on the skin cancer, the 200mcg Se/day group showed a 50 per cent decrease in total cancer mortality and 50 per cent decrease in cancer incidence, particularly in lung, colorectal and prostate cancers. The international interest in these spectacular results has initiated a plan for a much larger study in which US and 6 European countries including UK will collaborate.

The whole point about an adequate selenium intake is that only rarely, in the severest deficiency is there overt disease, but a subclinical deficiency will aggravate any specific weakness. The only way to assess an adequate intake is in terms of the response of an individual or population to supplementation. This is how hundreds of farmers have discovered that problems of infertility, mastitis and lameness in their cattle can be due to selenium deficiency: they responded, as described in our memorandum, when selenium was restored to the soil. While every week the *Vet Record* and farming press carry reports of infertility, mastitis and lameness, and the FAWC singles out lameness as the most pressing welfare problem in cattle, Danny Goodwin-Jones of Trace Element Services has been eliminating these problems on UK farms since 1983, accumulating experience and expanding his reputation among farmers desperate to find solutions that vets cannot provide. I would beg you to invite him to give evidence to your committee.

We are not only talking about animal health: MAFF and COMA state correctly that UK selenium blood levels have been falling since our accession to the EEC when we were obliged to decrease our imports of Canadian wheat (containing 200–500mcg/kg) from 1½ million tonnes to 200,000t/year, and depend for our bread and flour on EU/UK wheat (containing 20–50mcg/kg). What they have not realised is that the major source of intake should be coming from meat, dairy products and eggs. The Finns who since 1985 (Varo P et al in "Selenium in Biology and Human Health", Burk R.F. ed. NY. Springer-Verlag 1994 pp200–218) have corrected their acute soil deficiency by making it mandatory for every bag of NPK fertiliser to contain 6mg/kg selenium (supplying 3mg/ha/year to the fields), estimate that 40 per cent of their population's intake now comes from meat, over 25 per cent from eggs and dairy products and about 20 per cent from cereals (containing 100–300mcg/kg where before soil correction they contained about 10mcg/kg). Our animals are themselves too low in selenium to provide an appreciable percentage. The LCG figure for milk in the MAFF 1995 study was less than 10mcg/kg, compared to the Finns milk figure in 1992 of 170mcg/kg.

Thus we do not need "further research to investigate whether current levels of intake are inadequate." We already know they are. We already know that the major factor affecting its bioavailability is a plain and simple lack of it in the diet.

COMA advises that "selenium intakes and measurements of selenium status should continue to be monitored." The National Diet and Nutrition Survey is now collecting data for the 4-18 year olds, and plans to publish the results in 1999, when the survey of 19-64 year olds is scheduled to begin, and will no doubt be published well beyond the year 2000. For many people the information and recommendations may come too late. Tens of thousands have taken matters into their own hands and protect their health with a 100-200mcg/day suppliment. But this is an option too expensive for many, including the most vulnerable whose diet is inadequate in other ways.

When I wrote to MAFF and to COMA suggesting Britain would quickly resolve the problem by emulating the Finns, MAFF replied: "Initial reactions from colleagues in MAFF are that . . . mandatory fortification of fertilisers would not necessarily be the most efficient or effective means . . . Indeed there are instances where this might lead to toxicity problems. Possible knock on effects on the nutrient balance in the soils cannot be discounted but the data to quantify this is not adequate . . . Deficiency in animals is probably better targeted by selenium supplementation in the animals' diet."

MAFF suffer from a dearth of information. We await the publication of the belated Soil Survey analyses of soil selenium levels for England and Wales. But these are likely to be out of date and misleading since they derived from stored samples dug up between the 1950s and 1980s and now further depleted by agricultural intensification and acid rain. A far better guide would be the soils from some 2000 farms analysed for Goodwin-Jones and added to every week. Toxicity problems are pure speculation. Nutrient balance is an important consideration and it would of course be better if farmers could be persuaded to analyse and correct for other deficiencies, as is done by Goodwin -Jones. But selenium levels so far are universally low and already the cause of imbalance. Many farmers supplement their animals' diet with selenium in cakes and licks, sufficient to give protection against overt clinical deficiency, but doing nothing for subclinical deficiency.

The major problem in UK is that our agricultural scientists and medical profession never received and still do not receive any training in mineral and vitamin nutrition, nor do they pursue it later. Even vets are only taught to recognise clinical deficiency. Symptoms of subclinical deficiency are almost invariabley ascribed to other causes. Moreover since minerals and vitamins are unpatentable they have negligible research funding, and since they pose a competitive threat to chemicals and drugs, it is not in the interests of chemical and pharmaceutical companies to promote them or want them promoted by others.

What we badly need on the advisory bodies are the practitioners and scientists with knowledge and experience of this field of nutrition, drawn from the ranks for example of those in the Society for Allergy, Nutrition and Environmental Medicine, the Society for the Protection of Nutritional Therapy, Foresight and other organisations. It is they who can provide—based on years of clinical experience—the "expert scientific advice on the relationship between diet, nutritional status and health." (White Paper para 5.10). But since our food comes from the soil and its safety and quality depends on farming practice, and since our farm animals often suffer from the same mineral deficiencies as we do, there must continue to be an input and liaison with agriculture, and one which draws in particular from those with "field" experience. The FSA should actively seek out such people or invite them to come forward.

Finally, we are asked to comment on where the responsibility for definition of a balanced, healthy diet should rest, and in most cases the White Paper appears to have got it right. But we are told it is proposed that "Health Departments will retain responsibility for (5.13) wider public health policy issues including conditions (such as cardiovascular disease, cancer, osteoporosis or obesity) where nutritional status is one of a number of risk factors."

It has already been pointed out that a selenium deficiency can contribute to cardiovascular disease and cancer. In other words deficiency, whether of intake as is the case with selenium, or of uptake, as is the case with vitamin B6, can itself create a medical condition. To classify a substance as a medicine because it corrects the very condition that was caused by its deficiency is to fail to recognise what every dog knows who eats grass for an upset stomach, what every cow knows who searches the hedgerows for something she would not normally eat, and what our ancestors knew from experience—that foods are nutritional but they may also be medicines. The same applies to food supplements.

There is now a very real danger that at UK or EU level or via Codex "agreements", restrictive demarcations as to what is food, what is medicinal will deny the public free access to supplements, herbal remedies etc and the right of all in a free society to decide how best to protect their own and their families health. The FSA must be prepared to safeguard these rights and see that they are written into domestic and international law.

26 February 1998

APPENDIX 77

Memorandum submitted by the Environment Agency (C122)

1. Executive Summary

1.1 The Environment Agency welcomes the opportunity to give evidence to the House of Commons Agriculture Committee inquiry into food safety.

We have:

Outlined the role of the Agency in this area and,

Indicated our understanding of the extent of the risks to human health of the practices of landspreading of sewage sludge and other organic wastes.

We currently take the opinion of two prestigious committees that there is no reason to believe there is risk if the practices are carried out in accordance with best practice.

We agree with these committees that there is a need to review the practices and what is known about them, and are taking part in some of the commissioned work.

We expect this work to report soon. We have made arrangements with DETR to collaborate on reviewing the regulations applied to the landspreading of industrial wastes.

We will update our policies and guidance in the light of the published reports.

2. INTRODUCTION

2.1 The Environment Agency for England and Wales (the Agency) welcomes the opportunity to submit this memorandum of evidence to the House of Commons Agriculture Committee inquiry into food safety.

2.2 The Committee has asked the Agency to comment on the potential risk to human health resulting from the application of sewage sludge and other organic wastes to agricultural land. This memorandum discusses:

- the extent of that risk; and
- the effectiveness of regulation in minimising the risk;

in the context of the role of the Agency, which only has a remit for England and Wales.

- The same regulatory systems exist in Scotland, administered by the Scottish Environment Protection Agency.

2.3 We would draw the Committee's attention to two other memoranda of evidence the Agency has submitted which may be helpful; one to the Environment Sub-Committee inquiry into sustainable waste management, and the other to the Environment, Transport and Regional Affairs Committee inquiry into sewage treatment and disposal.

2.4 We have also supplied more detailed information in three technical annexes:

Annex A looks at the potential risks and sources;

Annex B advises on why sewage sludge and other wastes are spread on land—explaining the sustainable development view; and

Annex C sets out the policy and regulatory framework the Agency works in, explaining the regulations and their derivation from European Directives.

3. ROLE OF THE AGENCY

3.1 The Environment Agency:

- provides advice and support to DETR, our sponsor Department, and to other Government departments (in this instance to MAFF and the DoH). We have both technical experts and experienced regulators who are in close touch with the effects of the impacts of Government policies and legislation;
- contributes to the achievement of sustainable development. In particular, we:
  - must have regard to the costs and benefits of what we do; and
  - must work in an integrated fashion, taking an holistic approach to the environment and the challenges and pressures to which it is subjected.

The Agency's role in delivering Government policy through regulation

3.2 The Agency has a direct regulatory responsibility in protecting human health exercised by enforcing the requirements of two pieces of legislation:

- The application of sewage sludge in agriculture is controlled through the Sludge (Use in Agriculture) Regulations (1989); and
- the spreading of certain other industrial wastes to land (including land used for agriculture) is controlled through the Waste Management Licensing Regulations (1994).

The details of the European Directives, and the UK policies and regulations that implement them are given in the Annex C.

Control of similar wastes

Imported Materials

3.3 Fertilisers and soil conditioners derived from the above materials may be imported into the UK, as well as sewage sludge. We believe we have a role in controlling these although the legal position is complicated. We are, for instance, considering risk assessing imported soil conditioner derived from sewage sludge from the US for its impact on the UK environment. The Ministry of Agriculture, Fisheries and Food have powers over the importation of fertilizers derived from animal wastes.

Farm Wastes

3.4 About 21 million tonnes a year of farm animal wastes are returned to land. The only role the Agency has in controlling the management of these wastes is the prevention of pollution of surface and ground waters.

In regulating we must consider

3.5 Ministers have asked us (in the DETR Management Statement for the Agency) to operate to high professional standards, based on sound science, information and analysis of the environment and of processes which affect it.

3.6 Statutory guidance from Paragraph 10 of Circular 11/94 (which accompanies the Waste Management Licensing Regulations 1994) indicates that regulation (of wastes) should be proportionate to the risks involved and the benefits obtained; that regulation should be goal based, not serve an end in itself, nor be over-prescriptive, and should not impose an unjustifiable or disproportionate burden on those regulated—especially small businesses.

3.7 Our role is in advising and implementing legislation that minimises the impact of spreading sewage sludges and other wastes to agricultural land on the environment, and seeks to break or minimise pathways for infection.

3.8 We recognise we are not the lead authority for the protection of public or animal health; we do not have medical or public health competences. We are discussing with the Department of Health (DoH), how we get our public health advice.

3.9 We have already built good working relationships with DETR, MAFF and DoH in different health areas such as the management of liquid and solid wastes arising from the BSE crisis and the safe management of clinical wastes. We will continue to build on those relationships.

3.10 We look forward to working with the Food Safety Agency on these topics, and would welcome their advice on standards for protecting food. We see their role as regulating food standards at both point of crop harvest and supply to public. We have already accepted invitations to join some of the working groups which are being established.

4. Extent of the Risk and the Effectiveness of Regulation

Overall

4.1 The Agency currently accepts the views expressed in:

The nineteenth report of the Royal Commission on Environmental Pollution (the RCEP report) on the sustainable use of soil, February 1996;

The review of the rules for sewage sludge application to agricultural land; Food safety and relevant animal health aspects of potentially toxic elements (PTEs)—the report of the Steering Group on Chemical Aspects of Food Surveillance (SGCAFS), November 1993.

The findings of these reports are considered below; in summary they found no evidence of contamination or infection.

4.2 However, both reports recommended further work. Two key studies are now in progress and both are expected to report at or soon after the end of April 1998:

1. A review of the rules in the Sewage Sludge Code of Practice
2. A research and development (R&D) project looking at the criteria for and developing guidance on the landspreading of industrial wastes.

4.3 We are consultees to the review and co-funders and managers of the R&D project. We will consider the results, and have already made arrangements with DETR to collaborate with reviewing the regulatory arrangements for the landspreading of industrial wastes. We will also review and update our policies and guidance for regulation of and good practice in both the application of sewage sludge and other wastes to land.

Detail

Sewage Sludge

Infection

4.4 The RCEP report on the sustainable use of soil stated that where the appropriate precautions are taken there is no evidence to suggest that there is a significant risk of infection resulting from the use of sludge in agriculture. The report also noted that there have been no instances in the UK where a link has been established between the controlled application of sewage sludge to agricultural land and disease in the general population through food or water contamination.

4.5 This lack of evidence should not however lead to complacency. The fact that incidents have not occured does not mean that the potential for them to occur does not exist. Further good record of a lack of incidents in the future can only be assured through producer and user practices which are in complete compliance with the Sludge (Use in Agriculture) Regulations (1989) and through efficient Agency enforcement of those requirements.

4.6 The RCEP report on the sustainable use of soils recommended that all sewage sludge applied to agricultural land should be treated by at least one of the methods listed in the UK Code of Practice for the use of sewage in agriculture.

Potentially toxic elements

Inorganic PTEs

4.7 The food safety and animal health aspects of inorganic PTEs were reviewed by the SGCAFS Committee, which reported in November 1993. They concentrated on lead, cadmium and flouride as concern had focused on these elements.

4.8 Their general conclusions were reassuring, but they pointed out the importance of agricultural land for the future, and accordingly suggested that contamination by metals should be regarded as irreversible and must be kept to the lowest practicable level. They advised uptake by crops is unlikely to pose a food safety problem.

4.9 The report recommended the strict adherence to the sampling provisions in the Sludge Code of Practice (which accompanies the regulations), to avoid underestimating the heavy metal concentration near the surface.

Organic PTEs

4.10 The role and significance of trace organic contaminants in the environment has been a source of considerable scientific discussion. As part of this discussion, the potential effects of organic PTEs in sewage sludge on human, animal and plant health and soil fertility have been acknowledged for some time. There is uncertainty about the persistence, form and bioavailability of some organic compounds in sludge amended agricultural soils and the wider environment. Currently there is little evidence to show that the levels of these materials which may result from the spreading of sewage sludge actually pose a significant risk to the environment in the UK. General indications are that these compounds do not present a hazard to public health through their transmission through the food chain. Although outside the scope of the Bradshaw report, the Committee recommended that this aspect of sewage sludge should be kept under review. Given our increasing awareness of endocrine disrupting compounds in the general environment the Agency also believes that there is a need to actively review the situation on a regular basis.

4.11 The UK Government and the water industry has sponsored a considerable body of research in this area. The Agency welcomes this, and will base any future Agency policy decisions and guidance on the findings of these ongoing and other research and review projects.

4.12 In its reponse to the recommendations of the RCEP soil report, the Government stated that is is right to take a precautionary approach and also recognised the importance of maintaining public confidence in the adequacy of controls, and the use of the outlet. The Government has commissioned a comprehensive review of the research on which the 1989 Code of Practice were based together with a review of all the work which has been undertaken since publication of the Code. The Agency understands that the work will be completed by April 1998, and if the Government accepts the recommendations of the report, appropriate changes to the legislation will be made as required. The Agency welcomes this ongoing work and will review its own policies and guidance accordingly.

Other wastes

4.13 Many of the risks and concerns which were discussed in the section of this evidence covering the use of sewage sludges in agriculture also apply to the use of other waste materials including those of organic origin. The RCEP report recommended the review of the legislation applying to the spreading of wastes on land "with the aim of improving control and making regulation of the application of all wastes to land more consistent". The then Department of the Environment undertook to carry out such a review in the light of research commissioned with WRC and ADAS. This project aims to determine in what circumstances the spreading on land of particular wastes will benefit agriculture or result in ecological improvement. This research was jointly sponsored with the Agency and MAFF, and is now due to be completed by the end of April 1998 (The project having been extended; more details are given in section 5.). The DETR and the Agency have already made arrangements to collaborate on the review on receipt of the report.

4.14 The Agency is aware of the potential risks to human health which could result from the land spreading of some of the types of waste which are listed above and will aproach them using the same methodology as it uses to regulate sewage sludges. As with sewage sludges, there is no detailed evidence to show that there is a significant risk of infection following application of these wastes where good agricultural and environmental practice is used. Again, this should not lead to a feeling of complacency. The low incidence does not mean that the potential from them to occur does not exist. The continued safety of the recycling outlet can only be assured by effective regulation. The Agency is preparing guidance for good practice, based on the sewage sludge Code of Practice and supported by research (see 4.7). In working in this way the Agency is aiming to provide a consistent approach to the regulation of the land spreading of all sludges regardless of their origin.

4.15 We highlighted in 3.9 the risk of imported foods, fertilisers and sewage sludge. Of course, we consider we only have a remit to control the importation of sewage sludge, other wastes and materials derived from them. A risk assessment project is under consideration for a proposal to import a sewage sludge-based soil conditioner from the US.

5. What we are Doing Currently and What Actions we are Taking

Our inheritance from predecessor bodies

Sewage sludge

5.1 Historically, regulation of this activity has not been well-resourced, and the current level of information available through the use of regulatory powers is less than desirable. The Agency has inherited grant in aid (GIA) for one full time post.

Other wastes

5.2 There are 14,000 exemptions registered with the Agency, increasing rapidly; not all of these relate to landspreading. We have 7,500 licenced facilities, including about 1,000 landfills.

5.3 After considering its resources and priorities, the Agency allows an average of one and a half hours regulatory time per registered activity from GIA.

What we are doing to improve the current situation

Sewage sludge

5.4 In developing Agency policy and regulatory guidance for the control of sludge application to agricultural land the Agency is seeking to ensure that all sludges are applied in accordance with good practice to prevent the transfer of microbial agents to grazing animals or into the food chain. Any person who contravenes any of the Sludge (Use in Agriculture) Regulations (1989) is guilty of an offence—which means that any or all of the sludge producer, his contractor and the farmer may be liable to prosecution if they fail to comply with the Regulations. The Agency proposes that farmers should be supplied, by the sewage undertaker, with:

- details of both parties' obligations under the Sludge Regulations;
- comprehensive information on nutrients and PTEs; and
- application rates;

this should be for sludges as supplied, (and not an average, or historical figure).

The Select Committee inquiry into sewage treatment and disposal has already supported these Agency proposals

5.5 The use of untreated sludges is permitted under the Sludge Regulations but requires additional precautions to ensure that there is no transmission of pathogens (see above). The Agency policy and guidance will encourage the sewerage undertakers to make the best use of the resource that sludge represents and will encourage them to use the most appropriate level of sludge treatment for the agricultural uses required in their particular area. Thus we will be encouraging the use of uniform and consistent products which will provide a better product for the customer (the farmer) and for the environment—including protection of human, animal and plant health.

5.6 We believe the safe use of sewage sludge in agriculture should be reinforced through demonstration of excellence of practice by the water and agricultural industries as outlined in our regulatory guidance (in preparation), coupled with the reassurance provided by our regulatory audit. All these measures should be open to public inspection.

Other wastes

5.7 The Agency has jointly commissioned a research project with MAFF and DETR to investigate the criteria for, and the guidance on, the land spreading of industrial wastes. The primary aim of the research is to establish the principles of agricultural benefit and ecological improvement, and identify how wastes can be spread to land whilst meeting the Waste Framework Directive Article 4 objectives for protecting human health and the environment (see 5.14).

5.8 This project is currently very close to completion and will be used in two ways:

1. DETR, in consultation with the Agency, will be reviewing the exemptions and their role in delivering sustainable waste management, including meeting the objectives of protecting human health and the environment; this is already scheduled.
2. The Agency will be using the results so far to draft technical guidance on good practice for the spreading of off farm wastes. The guidance is intended to define the criteria for land spreading so it is:
   - demonstrably beneficial to agriculture or provides ecological improvement;
   - consistent with the principles of sustainable development; and
   - protects human health and the environment as required by Article 4 of the Waste Framework Directive (see 5.14).

5.9 The guidance will enable the Agency to enforce the requirements of the Regulations in a consistent manner across the UK. Adoption of the guidance by all sectors involved in the land spreading of waste under an exemption from the Waste Management Licensing Regulations (1994) will provide the Agency and the public with a high level of assurance that both the environment and public health are being protected irrespective of the type of waste which is being recycled in this fashion. However, adoption by the industry will be voluntary under the existing regulatory regimes. The Agency will be using the derived definitions of agricultural benefit and ecological improvement to advise its enforcement activities.

5.10 The Agency will use this project in part to help inform of the potential for risks from this practice and to highlight where future R&D is required to satisfy any remaining questions. The Agency is aware of a number of recently highlighted issues related to this practice and will continue to review its position in the light of the results of current and future R&D in the topic area.

Additionally

5.11 In the preparation of the guidance and policies referred above we have drawn on the expertise of staff from different backgrounds, and will develop information that is coherent and helpful to our staff, as well as sewage undertakers, waste managers and farmers.

5.12 As an integrated Agency we continue to build on the best from different expert backgrounds, and will use and extend techniques used elsewhere. For instance, we have developed (using consultants) risk assessments for the impact of BSE via environmental pathways.

5.13 The Agency recognises it needs outside expertise as well; the R&D project on the landspreading of industrial wastes has been undertaken by WRC and the Agricultural Advisory Service (ADAS), as review of sewage sludge management is also being undertaken by WRC, and we have used international risk consultants Det Norske Veritas, as well as WRC, to conduct the BSE risk assessments. We have an ongoing R&D programme, which we review regularly to ensure it is up to date in direction and meets our and our stakeholders needs.

March 1998

Annex A

THE POTENTIAL RISKS

Risks

A.1 Risks to human health from sludges and wastes spread on land are of two kinds:

1. *pathogens*; the risk of infection from organisms such as E colis, salmonella species, oocytes.
2. *potentially toxic elements (PTEs)*; PTEs include metals (such as mercury and cadmium) and organic chemicals (such as dioxins and PCBs).

A.2 As with all environmental risks, there are three components; the source, the pathway and the target.

Sources

A.3 The Committee has asked us to consider two sources of risk to human health, sewage sludge and other organic wastes; we would suggest two other sources should also be considered:

I. *Sewage sludge*

A.4 Agriculture already represents the largest outlet for sewage sludge recycling in the UK, accounting for 44 per cent of the current production (equating to 500,000 tonnes of dry solids, tds). Full implementation of the Urban Waste Water Treatment Directive (UWWTD) will expand the agricultural recycling route with the closing of the sea disposal route in 1998 and introducing treatment for all significant coastal and estuarine discharges of sewage. Data published by the Department of the Environment, Transport and the Regions (DETR) in 1995 indicated that sludge production will rise to 1.5 million tonnes dry solids (tds) by the year 2005, and as much as 66 per cent of this amount will be recycled to the agricultural outlet.

A.5 The House (in their inquiry into sewage treatment and disposal) has noted that only 1 per cent of land is currently used for such disposal operations, and additionally, perhaps 10 per cent of the country is within an appropriate travelling distance of a sewage treatment works. It was thought that the general rules protecting soil and water would narrow the choice to the one per cent already in use.

II. *Other controlled organic wastes*

A.6 A variety of wastes from other industries are spread on land; there has been no statutory requirement to keep or collect records of quantities and destinations. The Agency has no central information on these wastes and their destinations. We intend to start the National Waste Survey in Summer 1998. By late 1999 this will provide information on the amounts of wastes arising and disposal and recovery routes. Meanwhile, a research and development (R&D) project (see para 5.13) to be completed by the end of April 1998 will provide some industry estimates of the extent of the practice.

A.7 Rough estimates are that 900,000 tonnes (tds) of controlled wastes are returned to land a year, of which 15,000 tonnes (tds) are abattoir blood and gut contents. The largest amounts are of paper sludges (possibly 520,000 tds).

A.8 This should be compared with the risks from the spreading to land of 21 million tonnes of farm wastes.

IV. *Other sources*

A.9 We believe it is important to consider the risks from parallel sources, such as imported food, and fertilizers (both inorganic and organic) manufactured in the UK and imported. The Agency is considering the risk from the importation of sewage sludge, which may be classed as a waste and therefore within our control; we are also aware that imported fertilizers can be based on animal manures and plant wastes, which may be controlled by MAFF.

Pathways

A.10 Food

Food may be contaminated by the direct application of wastes to land, from soil previously used for landspreading, by contaminated water, or by dust and aerosols from the handling and storing of wastes.

A.11 Soil

Food contamination from soil will necessarily be the obvious route for the Committee's consideration. Pica (a childhood disorder in which the affected child eats soil direct) is also a possibility that has been considered in various risk assessments. MAFF has a Code of Practice for the Protection of Soil; we understand DETR is currently drafting a soil protection policy, although we are not aware of what this will mean for the protection of food. The Agency controls the application of sewage sludge and other controlled wastes (explained in section 5); we have no remit to control the application of farm and animal wastes. Where animal and other wastes had been spread on the same field, the source of pathogen (and some PTE) contamination would be difficult to identify.

A.12 Water

Pollutants and microorganisms can reach food by transmission through water, either as drinking water, used in washing crops or by irrigation with contaminated water. The Government's policy for water protection is where possible to prevent deterioration in water quality and to seek to secure improvements in accordance with agreed priorities which reflect the requirements of Community legislation. The Agency protects this route through regulation (the Water Resources Act 1991). The MAFF Code of Practice for the Protection of Water provides for additional voluntary protection.

A.13 Air

The storage, handling and spreading of sludges and wastes results in aerosols or dusts. These can be ingested directly by humans and animals, and may impact on flora and fauna, with an indirect impact on human and animal health. The risks associated with this source and pathway have not been evaluated. Again, there is a MAFF Code of Practice for the Protection of Air.

A.14 Parallel routes

Sludges and wastes are also applied to other land to improve it (as in forestry, reclaim of mineral workings). We have a role in protecting human health and the environment in these applications.

Targets

A.15 Besides the effects on human health, the Agency has to consider the effect of the transmission of pathogens and accumulation of PTEs on soil and animal health and soil fertility. The Agency must also consider whether the application of sludge and wastes to land may entail contamination of the wider environment.

A.16 This holistic view has benefits; consideration of the most susceptible target will protect more robust targets. For example, many plants and essential soil organisms have a far lower tolerance for some PTEs (such as nickel) than humans.

A.17 Limit values in regulation and codes of practice have usually been derived by considering the most vulnerable targets; frequently these are not the healthy human being.

A.18 In considering our role, we are clear we are not the competent authority for human or animal health; we look to the Department of Health and MAFF for this.

Annex B

WHY SEWAGE SLUDGE AND OTHER WASTES ARE SPREAD ON LAND—THE SUSTAINABLE DEVELOPMENT VIEW

Benefits

B.1 The main benefits of landspreading are:

- the recovery of value from wastes which in the past have been dumped at sea or landfilled;
- replacing chemical fertilizers; and
- improving soil structure.

B.2 Returning nutrients to the soil

Sewage sludge is a potentially valuable agricultural resource because it provides materials important to soil husbandry. These materials may be major components such as nitrogen and phosphorus, or micronutrients, such as sulphur. Industrial wastes applied to land may also have nutrient properties.

B.3 Conditioning soil

Sewage sludge adds organic matter to the soil as do some industrial wastes. This tends to improve the soil structure, assisting moisture retention and drainage and helping to prevent soil erosion. The wastes may also add moisture to dry soils.

Some industrial wastes have other soil improving properties, such as improving the drainage of clay soils, or making it more or less alkali (ie changing the pH).

The realities

B.4 When sewage treatment produces an effluent which can be safely discharged to a receiving water, sewage sludge is a necessary by-product. Depending on its disposal route sludge may be subject to further treatment. The production and management of sewage sludge is one of the sewage undertakers' principal costs; significant changes to the way sludge is managed will impact on charges to consumers. If less than the current 44 per cent of sewage sludge were returned to agriculture, levels of sludge treatment were increased, the undertakers charges might be expected to increase.

B.5 Historically, other industrial wastes have been spread on land, and these practices form the basis of the exemptions to the Waste Management Licencing Regulations discussed below (para C.22). Whilst this will be the most cost-effective route, changes will increase costs, and are likely to impact most on businesses such as small rural abattoirs.

Other options

B.6 The other options for treating sewage sludge and other wastes include incineration and landfill, and additional processing. They carry risks and disbenefits. We do not yet need to know all the trade-offs, but they include loss of the benefits (see 3.17, 3.18, 3.19), and the likelihood more fossil fuels may be consumed.

Best Practicable Environmental Option (BPEO)

B.7 The balancing of all these aspects can be achieved by analysing for the best practicable environmental option (BPEO). Consideration of BPEO is not currently a statutory requirement in the UK for sewage sludge management or for many industries which generate wastes which may be landspread; BATNEEC (Best Available Techniques Not Entailing Excessive Cost) having regard for BPEO is a statutory consideration for major process industries regulated by the Agency (the Integrated Pollution Control processes).

B.8 A consideration of industries throughout Europe will be used to show how they will use Best Available Technology (BAT) possibly with its BPEO, under Integrated Pollution Prevention and Control (IPPC; Council Directive 96/61/EC) in Autumn 1999. IPPC extends to some industries which spread their wastes on land, such as major food processing installations, large abattoirs; it will also include intensive poultry and pig rearing units.

B.9 Studies in other countries (such as Germany) have demonstrated that when the sludge production and treatment process is properly managed, the recycling of sewage sludge through agriculture, is often BPEO, and is likely to be as close to sustainable as can be achieved by existing techniques. The RCEP soil report accepted this. We understand that water companies in the UK have also undertaken their own studies.

B.10 The Agency's principal aim stated in Section 4 of the Environment Act is "to protect or enhance the environment" (including human health). The Agency is also charged in section 5 of the Act with considering costs and benefits of *"preventing or minimising, or remedying or mitigating the effects of, pollution of the environment . . ."*

B.11 In balancing priorities, we must acknowledge that society's resources are not unlimited and that choices must be made between environmental and other objectives and between different environmental objectives. Our policy objective promotes sustainable development by aiming for high standards of health and environmental protection whilst focussing measures and expenditure where action is most necessary and the efforts are justified and cost effective reflecting proper protection of health, safety and the environment.

B.12 The Agency supports the use of sewage sludge and certain other wastes in agriculture where these practices are subject to a high level of quality assurance, which we feel is a key element in their continued acceptablility. It is vital that the use of the agricultural outlet is seen as an open practice where no factors are hidden from public knowledge (or scrutiny). The Agency is aware of a number of recently highlighted issues related to this practice (such as Ecoli 0157) and will continue to review its position in the light of the results of current and future research and development (R&D) in the topic area.

Annex C

THE POLICY AND REGULATORY FRAMEWORK THE ENVIRONMENT AGENCY WORKS WITHIN

C.1 *Role in sustainable development*

The Agency's principle aim is defined in section 4 of the Environment Act 1995 as:

> "In discharging its functions so as to protect or enhance the environment, taken as a whole, as to make the contribution towards attaining the objective of achieving sustainable development that Ministers consider appropriate".

C.2 The previous Government's strategy for waste—*Making Waste Work—A Strategy for Sustainable Waste Management in England and Wales*—outlines policy for the land spreading of specified types of waste. The strategy describes the way in which the Government and the Agency will promote the use of farm waste management plans which can be used to maximise the benefit of spreading farm and other wastes whilst reducing the risk of pollution. *Making waste work* also sees land spreading as representing an economical, and where properly controlled, environmentally safe way of recovering value from a variety of wastes as these wastes can provide valuable nutrients which allow farmers to reduce the amount of inorganic fertilisers which are applied and can lead to improvements in soil structure.

C.3 We will be assisting the present Government with the development of their proposed statutory waste strategy. This will be informed by the National Waste Survey we are carrying out (see 3.6), our experience and information we gain from our expert regulators in the field and our R&D programme, particularly the development of life cycle assessment for various wastes options.

C.4 The Agency recognises that the use of sludge as an agricultural fertiliser will represent best practicable environmental option for the recycling of sludge in many cases. Thus, we would seek to encourage the use of sludge treatment techniques which will minimise potential environmental risk. We will use effective regulation, education and partnership to ensure that both the perceived and potential problems associated with the use of these materials are minimised through full enforcement of the Regulations. In practical terms, we are drafting our policy as regulatory guidance to assist at implementation of the Sludge Regulations and Code of Practice, and we are consulting widely on this. However, implementation will require proper resourcing.

The Agency's role in delivering Government policy through regulation

C.5 The Agency has a direct regulatory responsibility in protecting human health exercised by enforcing the requirements of two pieces of legislation:

- the application of sewage sludge in agriculture is controlled through the Sludge (Use in Agriculture) Regulations (1989); and
- the spreading of certain other industrial wastes to land (including land used for agriculture) is controlled through the Waste Management Licensing Regulations (1994).

C.6 In addition to the balancing of costs and benefits, we have been asked by Ministers (in the DETR Management Statement for the Agency) to operate to high professional standards, based on sound science, information and analysis of the environment and of processes which affect it.

C.7 Existing policy guidance from Paragraph 10 of Circular 11/94 (which accompanies the Waste Management Licensing Regulations 1994) indicates that regulation (of wastes) should be proportionate to the risks involved and the benefits obtained; that regulation should be goal based, not serve an end in itself, nor be over-prescriptive, and should not impose an unjustifiable or disproportionate burden on those regulated—especially small businesses.

Regulatory framework relating to application of sewage sludge to agricultural land;

EU Directives

C.8 Regulation 4(4)(b) of the Urban Waste Water Treatment (England and Wales) Regulations 1994, imposes a duty on water companies to ensure that treated waste water and sludge are re-used whenever appropriate. All sludges used in agriculture are subject to the requirements of the Council Directive on the protection of the environment, and in particular soil, when sewage sludge is used in agriculture. (86/278/EEC). The purpose of the Directive is in part to "ensure that man, animals, plants and the environment are fully safeguarded against the harmful effects arising from the uncontrolled use of sludge".

UK policy

C.9 UK policy on the use of sludge in agriculture relates the type of sludge treatment (in terms of its efficiency in destroying the infectivity of pathogens) to appropriate uses of land, and imposes additional temporal restrictions on use after application to permit any residual pathogens to decay. The principal recommendations for the control of infection can be summarised as follows:

- sludge which is effectively treated according to defined processes may be applied to grazing land subject to temporal restrictions on grazing as a precaution against salmonellosis;
- crops for human consumption in an uncooked state should not be sown within 12 months of the application of sewage sludge;
- additional restrictions are imposed where sludge is to be used on land grown for the production of potato crops. Extra precautions are required for the use of untreated sludges which must not be used where seed crops are to be grown; and lastly
- the use of untreated sewage sludges is further restricted by the need to apply these materials using specific methods (injection or incorporation into the soil as soon as is reasonably practicable following application).

UK regulations

C.10 The Sludge (Use in Agriculture) Regulations (1989) detail a range of restrictions which are designed to protect human, animal and plant health by preventing the transfer of microorganisms to the grazing animal and to the wider environment. They implement the Sludge Directive (86/278/EEC) and detail a range of restrictions on the application of sewage sludges to land which are intended to protect human, animal and plant health:

- by preventing the transfer of microorganisms to the grazing animal and to the wider environment; and
- by controlling the build up of potentially toxic elements (PTEs) in the soil.

The Agency views the wider environment to include humans.

UK Code of Practice

C.11 The Regulations are complemented by The Code of Practice for the Agricultural Use of Sewage Sludge. The Code embodies all of the statutory requirements of the regulations, and these requirements are not optional. The Code is designed to ensure that when sludge is used in agriculture:

(i) There is no conflict with good agricultural practice.

(ii) That the long term viability of agricultural activities is maintained.

(iii) That public nuisance and water pollution is prevented; and

(iv) That human, animal and plant health are not put at risk.

The Code of Practice embodies all of the statutory requirements of the Regulations which must be adhered to by all sludge producers. Thus elements of the Code are statutory requirements and cannot be adopted on a voluntary basis, whilst others are voluntary best practice.

C.12 As mentioned in paragraph 4.8, we are drafting additional regulatory guidance to assist in the implementation of the Sludge Regulations and Code of Practice. Given the increased importance the use of sludge in agriculture will have over the coming years we believe it is vitally important that companies invest sufficiently in levels of treatment, record keeping, and R&D to be able to address criticism or concern about environmental or public health consequences of this form of recycling.

REGULATORY FRAMEWORK RELATING TO THE APPLICATION OF OTHER WASTES TO AGRICULTURAL LAND

EU Directives

The "Waste Framework Directive" (91/156/EEC amending 75/442/EEC on waste)

C.13 Inter alia this Directive outlines the polluter pays principle and then introduces the concept of the waste hierarchy promoting the minimisation of waste and the recovery by means of recycling reuse or reclamation or as a source of energy. Article 11 of the Directive states that certain activities may be exempted from the permitting requirement described in the Directive provided that:

- the conditions outlined in article 4 are met; and
- also provided that the competent authorities have adopted general rules for each type of activity laying down the types and quantities of waste and the conditions under which the activity in question may be exempted.

Article 4 of the Directive requires that:

> "Member states shall take the necessary measures to ensure that waste is recovered or disposed of without endangering human health and without using processes or methods which could harm the environment, and in particular:
>
> - without risk to water, air, soil and plants or animals;
> - without causing a nuisance through noise or odours; and
> - without adversely affecting the countryside or places of special interest.
>
> Member states shall also take the necessary measures to prohibit the abandonment, dumping or uncontrolled disposal of waste."

Annex IIB of the Directive lists the operations which may result in recovery and specifically includes the land spreading of waste in R10:

> "R10 Spreading on land resulting in benefit to agriculture or ecological improvement, including composting and other biological transformation processes, except in the case of waste excluded under Article 2(1)(b)(iii)."

It should be noted that wastes excuded from this directive include:

> "animal carcasses and the following agricultural waste: faecal matter and other natural, non-dangerous substances used in farming;"

UK Waste policy

C.14 This has been set out previously in Making Waste Work, and is being reviewed by the present Government (as referred to elsewhere).

UK Waste Management Licensing Regulations

C.15 Other wastes may be disposed of or recycled to land under the controls of Waste Management Licensing Regulations 1994. Certain wastes recycled to agricultural, and other land, enjoy exemptions from the licensing regime, providing they meet certain criteria. A few waste management licences do exist for the landspreading of wastes that do not meet the requirements of the exemptions.

C.16 The principal regulatory control for the management of controlled waste in England, Wales and Scotland is the waste management licensing system set up under Part II of the Environmental Protection Act 1990, brought into force by the Waste Management Licensing Regulations 1994. This implements the requirements of the waste framework directive.

C.17 The regulations provide a system for the licensing of waste recovery, disposal and treatment operations. Provision is made under Paragraph 17 for the exemption of certain activities from the full licensing requirements. This has the advantage of making the option of recycling cheaper and easier for industry, and is the likely route for the majority of the specified wastes, rather than licensed sites. Regulatory resource then has to be found from grant in aid (GIA) rather from fees associated with waste management licences.

C.18 The spreading of sewage sludge to land not used for agriculture (as defined in the Sludge Regulations) is also exempted, provided that there is ecological improvement and the PTE concentration in the Regulations are adhered to. This is to enable the recovery of nutrients and soil improvement, for instance, in restoring old mine spoil.

C.19 Paragraph 18 details the requirements for the registration of exempt activities with local authorities or the waste regulator (now the Environment Agency). These registers include the name and address of the establishment or undertaking, the activity which constitutes an exempt activity, and the place where the activity is carried out.

C.20 An activity only qualifies as an exemption subject to certain conditions as laid out in Paragraph 17 and Schedule 3 of the 1994 regulations. In addition, the activity must not lead to a breach of Section 33(1)(c) of the 1990 Act, ie it must not be likely to cause pollution of the environment or harm to human health and the Article 4 objectives listed above must be achieved (enacted as Schedule 4, paragraph 4 to the Waste Management Licensing Regulations (1994). Land spreading of specified wastes on agricultural land is an activity which may be suitable for exemption provided that certain requirements are complied with. A key requirement is that the activity must result in benefit to agriculture, or ecological improvement.

C.21 Associated guidance for the spreading of controlled waste to land is contained in:

- Joint Circular from the Department of the Environment (11/94), the Welsh Office (26/94) and the Scottish Office (10/94) entitled "Environmental Protection Act 1990: Part II, Waste Management Licensing, The Framework Directive on Waste"; and
- MAFF Codes of Good Agricultural Practice for the protection of Soil (1993), Water (1991) and Air (1992)—for the spreading on agricultural land.

C.22 The full list of exempt activities is given in Schedule 3 to the Regulations, but the Committee is most likely to be interested in Table 1 (below). They are listed in Schedule 3 paragraph 7 of the Waste Management Licensing Regulations (1994) as those which may be suitable for recycling to agricultural land provided that the conditions which are described in the regulations and the paragraph are complied with.

Table 1

WASTE TYPES WHICH MAY BE SPREAD TO LAND BY VIRTUE OF EXEMPTION FROM FULL LICENSING UNDER THE WASTE MANAGEMENT LICENSING REGULATIONS (1994)

Part 1

Waste soil or compost

Waste Wood, bark or other plant matter

Part 2

Waste food, drink or materials used in or resulting from the preparation of food or drink

Blood and gut contents from abattoirs

Waste lime

Lime sludge from cement manufacture or gas processing

Waste gypsum

Paper waste sludge, waste paper and de-inked paper pulp

Dredgings from inland waters

Textile waste

Septic tank sludge*

Sludge from biological treatment plants

Waste hair and effluent treatment from a tannery

* *Subject to amendments made under the Waste Management Licensing (Amendment) Regulations 1995, the spreading of septic tank sludge on agricultural land is controlled under the Sludge (Use in Agriculture) Regulations 1989, of which only Regulation 4 applies.*

Outline of Agency's actual duties under relevant SIs, and the judgements these entail

C.23 The Environment Act 1995 transferred the duties of the Secretary of State listed in the Sludge (Use in Agriculture) Regulations (1989) to the Agency. Thus whilst it is not a specific objective of these duties to protect human health, the Agency does have the principal aim of preventing harm to the environment where harm is defined as:

> harm to the health of living organisms or other interferences with ecological systems of which they form a part and in the case of man includes offence to any of his senses or

C.24 The Environment Act also transferred the powers and duties of the waste regulation authorities from local government to the Agency on its formation in 1996. The protection of human health (and prevention of environmental harm) from the treating, keeping or disposing of waste are set out in section 33 of the Environmental Protection Act 1990. This is reinforced by the implementation of the Waste Framework Directive set out in 5.14 onwards.

Scientific and technical base for regulatory judgements

C.25 A key objective of the Sludge Regulations is to control the addition of PTEs to the soil as a result of sludge additions. The Agency, as competent authority for these regulations, is responsible for ensuring that the regulations are not breached by sludge producers applying sludge to agricultural land. The limit values listed in the Sludge Regulations and in the accompanying Code of Practice are based on the accumulation of PTEs in the soil. The limits were based on an extensive body of sound research.

C.26 When considering the application of wastes onto land, both under the terms of a waste management licence or an exemption, we would use advice in the MAFF Codes of Good Agricultural Practice in protecting the environment, and the Sludge Code for advice on loading rates for PTEs and good practice to protect food crops (both for humans and animals). Circular 11/94, which is statutory guidance, says that properly qualified advice should be sought to ensure the terms of the exemption are met for each waste material, soil and site. The "agricultural benefit and ecological improvement" should be interpreted for the type of wastes and category of land involved.

APPENDIX 78

Supplementary Memorandum submitted by Friends of the Earth (C123)

1. INTRODUCTION

Friends of the Earth welcomes the opportunity to submit further written evidence to the Agriculture Committee.

This submission is intended to expand on points raised in our first submission in the light of the publication of the White Paper on the Food Standards Agency (Cm 3830). And to add to points we made during our oral evidence to the Committee on 17 February 1998.

2. THE FOOD STANDARDS AGENCY

Friends of the Earth warmly welcome the proposal to establish the Food Standards Agency (FSA).

The Precautionary Principle

Friends of the Earth were very disappointed that the guiding principles on page 5 of the White Paper did not include a commitment to the precautionary principle. This is despite Ministers publicly stating their commitment to it.

We suggest a tenth guiding principle should be included along the following lines:

> The Agency will follow a precautionary principle if there is insufficient evidence on which to assess risk of a particular policy or course of action.

Powers to Influence Policy

The White Paper *The Foods Standards Agency—A Force for Change* indicates that the FSA will have powers beyond the farm gate, for example, paragraph 4.8 *"the Agency will be able itself to take action, for example, by controlling the entry of food materials from the farm into the human food chain"* and paragraph 4.41 *"the Agency will have powers to take follow-up action in premises producing food should this be necessary"*.

The Ministry of Agriculture has had similar powers for many years to prevent unwholesome food reaching the human food chain, for instance, the prevention of sheep meat being sold from farms contaminated by fallout from Chernobyl, and milk with high cell count cannot enter the liquid milk stream.

The White Paper gives no clear indication as to whether the FSA will have sufficient clout to require MAFF to make the required policy changes or changes in the advice they give to famers to eliminate food contamination at source. We believe that the FSA must have the power to intervene at the point in the food chain where contamination originates, be this on the farm or in the kitchen, by directing those responsible for policy and practice to remove the risk to public health. That is not to say that the FSA should become a national food police but to ensure that those who have responsibility are developing policy and practice which puts public health first.

An example of how the FSA might intervene concerns fungicide residues in the UK winter lettuce crop. The Working Party on Pesticide Residues Annual Report for 1996 highlighted problems of certain fungicides being detected at above the Maximum Residue Level (MRL) in UK grown winter lettuces. Dithiocarbamates and propamocarb were both found at levels above MRL. Propamocarb was particularly singled out by the Working Party:

> "the MRL for propamocarb is 10mg/kg although it is known that compliance with UK good practice can result in propamocarb residues up to 20 mg/kg".

Thus MAFF advice to growers on how to apply propamocarb was inadequate to prevent MRLs being breached. This problem was apparent in the Working Party reports for 1994 and 1995. The 1996 data showed that propamocarb exceeded the MRL by 4.4 times in one lettuce and 3.4 times in another.

MAFF has failed to rectify this problem over three years. If the FSA had powers to force MAFF to investigate and identify the causes of the breaches and provide new advice to growers on an agreed timetable, the potential risk could be eliminated quite quickly.

The contamination of meat with pathogenic organisms is a major public health problem and public concern. The number of food poisoning cases has increased alarmingly recently. The Communicable Disease Surveillance Centre reported a 33 per cent increase in England and Wales in *Campylobacter* and *Salmonella* faecal isolations between 1988 and 1994. It is reported that one in 30 to one in 40 cases are actually reported (Roberts J A et al *British Medical Journal* 298 1227–1230 1989 and Sockett P, *Food Policy,* 110–119 April, 1993). Sockett estimated the cost of each case to be £711 in 1988 taking into account working hours lost and the cost of health care.

The total cost of food poisoning in England and Wales has been put at well over £1 billion and perhaps as high as £3 billion by Compassion in World Farming (*Factory Farming and Human Health 1997*).

The Government's Advisory Committee on the Microbiological Safety of Food stated in their 1996 *Report on Poultry Meat* that "raw poultry meat is a significant carrier of pathogens, particularly *Salmonella* and *Campylobacter*". The Advisory Committee highlighted the role of animal feed as a source of *Salmonella* and the environment of the intensive broiler house to be the most significant reservoir of infection for *Campylobacter*.

A massive reduction in food poisoning cases will be a priority for the FSA. It is hard to see how the problem will be eradicated from the food chain unless the practices which cause the intitial contamination can be improved. In the case of intensive livestock production this may involve extensive reforms, for instance of what animals are fed, their living environment and methods of transportation. The FSA must therefore have sufficient power to insist that MAFF brings in the necessary reforms, to an agreed timetable, at whatever part of the food chain is appropriate.

Pathogenic contamination can occur at any stage of the food chain due to bad hygiene practices. Meat which is clean on leaving the farm cannot therefore be guaranteed pathogen free for consumers unless hygiene regulations are enforced and processors and the public have greater awareness of prevention of contamination. The FSA will have a crucial role to pay in ensuring a high level of enforcement by those agencies responsible and in increasing awareness of the need for high standards of hygiene.

The Precautionary Principle and Genetically Modified Organisms

Friends of the Earth welcomed the proposal to make the approval of genetically modified (GM) foods and animal feeds part of the FSA's remit. However, we were very disappointed that this change did not also bring about a change to a more precautionary approach to the granting of approvals for GM food.

Genetic engineering is a new science and our knowledge of the techniques involved in splicing genes into cells and creating novel organisms is far from complete. So too is our knowledge of the likely impacts of GM food on human health. The example of how a tryptophan food supplement which was contaminated, produced using genetically engineered bacteria, caused 37 deaths and thousands of disabilities in the USA in 1989 illustrates how small changes in the composition of our diet can bring unexpected results. Whether this problem arose because of genetic engineering or changes in processing of the Tryptophan is unclear at present.

Friends of the Earth believe that the risks involved in exposing children and adults to new proteins in their diet cannot be assessed quickly. The present approval system is too limited in its scope and time scales for research. The potential for new allergic reactions and toxins is real and needs to be subject to long term research. Decisions are based on limited experience and, as the tryptophan case quoted above illustrates, the unexpected can occur.

No one is starving because of lack of GMOs in the world but they are because of political instability, bad farming practices, poor distribution systems and lack of access to land. Arthur Chaguma, Food Security Division Manager of the Environment and Development Agency, Zimbabwe summed up the impact of agribusiness at a Farmers' World Network Conference in March 1994:

> "Agribusiness promoted hybrid seeds among the peasant farmers of Zimbabwe with great efficiency and arrogance—indigenous seeds were considered inferior and primitive. Government extension services also aggressively promoted agribusiness, penalising farmers who intercropped to spread risk. Agricultural training in the region has been 100 per cent Western; so there was a total failure in the formal system to recognise and incorporate farmers' knowledge in the use and management of plant genetic resources. The expansion of modern varieties of hybrid maize did not bring resource poor farmers to profit. On the contrary it aggravated household food insecurity, natural resource degradation and erosion of the genetic stock upon which local farming systems depended".

The same could equally be said of genetically engineered hybrid seeds.

Pesticide Safety

The lack of public confidence in the UK food chain has been a driving force behind the establishment of the FSA (paragraph 1.1 of the White Paper). Paragraph 1.11 of the White Paper highlighted the *"conflicts of interests within MAFF arising from its dual responsibility for protecting public health and for sponsoring the agriculture and food industries"*.

It is therefore surprising that the Government has decided to retain the Pesticides Safety Directorate (PSD) as an Executive Agency of MAFF. Most other functions relating to safety currently carried out by MAFF are being transferred to the FSA.

Friends of the Earth believes that the PSD should be removed from MAFF control to demonstrate the Government's intention to separate all aspects of food safety from food production and processing. PSD has responsibility for worker and human health and environmental protection and it therefore does not entirely fit with the FSA's remit. We therefore suggest that PSD should become an Executive Agency of the Department of Health with the FSA having powers of veto on public health ground. It will be important to keep the PSD team together but the change we have suggested will send a clear message to the staff of PSD that health and environmental protection are the top priority.

The position of the Veterinary Medicine Directorate (VMD) is less clear. However, because of the environment and health impact of sheep dip chemicals and other ecto-parasite treatments, we believe that the approval of these should be transferred to PSD. The VMD could then remain as an Executive Agency of MAFF dealing with the safety, efficacy and animal welfare implications of veterinary medicines. The FSA should have power to veto VMD decisions on health grounds.

The Current Approval Process

The secrecy surrounding the approval of new pesticides, new uses of old pesticides and modifications to approvals concerns Friends of the Earth. Recently we enquired of PSD whether an application for a new use for a pesticide had been received and were told that the information of this nature could not be released until the application had been processed by the Advisory Committee on Pesticides and the PSD. Once the committee has made a decision it is announced in the Pesticide Register by which time it is not possible for interested parties to object. This contrasts markedly with the approvals for new seed varieties entering the national list when parties with sufficient interest can object and have a right to a hearing and submit written evidence.

In his introduction to the White Paper, the Prime Minister stated *"The Government is determined to do away with the old climate of secrecy and suspicion . . ."*.

Friends of the Earth do not believe that this principle has been followed when it comes to pesticide safety. The formation of the FSA is an opportunity to put this right and make pesticide approvals much more open to public scrutiny.

Deficiencies in the Present Approval System

There are several very clear deficiencies relating to the health impacts of pesticides in the present approval system. These can be summarised as follows:

1. Multiple residues of pesticides in food and drinking water is not adequately considered in particular the possibility of synergistic effects.
2. The impact of long term exposure to low levels of pesticides in food is not adequately assessed. These effects may be difficult to separate from the effects of other chemicals and may take years to develop.
3. New evidence of health risks is not acted upon with sufficient urgency.
4. The precautionary principle is lacking especially when data on long term health risks is not available.
5. Failure to address the impact of pesticide exposure at low level in children who are still developing the vital organs of their bodies.
6. Small sample sizes for residue testing in comparison with the total amount of food consumed.
7. Testing programmes have only just begun to look at variation within samples. For instance the difference in residue levels between individual carrots varied by 20 times in a MAFF survey in 1995. Survey of bananas are for the whole fruit including the skin and therefore do not represent the reality of what is being consumed (personal communication PSD 1998).
8. Evidence of misuse of pesticides or incorrect advice on application takes a long time to be acted upon by PSD.

27 February 1998

APPENDIX 79

Supplementary Memorandum submitted by Dr Erik Millstone, Science Policy Research Unit, Sussex University (C124)

I spoke to a colleague of yours on the afternoon of Friday 27 February. She indicated that the Committee would accept supplementary written evidence on the White Paper *The Food Standards Agency: A Force for Change* if it was faxed on Monday 2 March.

I am accordingly attaching a document, but a brief explanation is in order. I have prepared this document in collaboration with Professor Tim Lang of the Centre for Food Policy, Thames Valley University and with Dr Michael Rayner of the British Heart Foundation Health Promotion Research Group, Division of Public Health and Primary Health Care, University of Oxford.

The attached document is, however, not our final response to the White Paper. At a meeting held on Wednesday 25 February I had an exchange with Food Minister Jeff Rooker during which I argued that the Pesticides Safety Directorate and the Veterinary Medicines Directorate were both organisations which failed adequately to protect public health because they systematically favoured industrial interests. Mr Rooker invited me to include in my submission on the White Paper some evidence to support my contention. I shall be doing so, but that discussion will not be ready in time to include it within the submission to the Agriculture Select Committee. Consequently, the attached document represents our collective analysis, but not our final and complete response to the White Paper.

I would be happy to discuss my evidence with the Agriculture Select Committee.

RE. WHITE PAPER: THE FOOD STANDARDS AGENCY: A FORCE FOR CHANGE

As independent academic scholars who, since the 1970s, have studied and analysed food policy-making in the UK and EC/EU, we enthusiastically welcome the publication of this White Paper.

The White Paper consititutes the single most important step forward in UK food standards and food safety policy since the end of the Second World War. It is rooted in a robust and well-informed analysis of many of the problems which hitherto have beset food standards policy-making.

That said, it is one thing to design an aeroplane; it is another to make it fly. The Government will need to:

1. be extremely careful over how this plan is executed;
2. ensure that a truly progressive, public interest culture is developed within the Agency; and
3. fund the Agency adequately.

IN SUMMARY OUR MAIN RECOMMENDATIONS ARE:

We propose that the first Guiding Principle should be reworded to read: "The essential aim of the Agency is the promotion and protection of public health in relation to food."

Guiding Principle 2 needs to be interpreted in the light of the remarks in Para 2.6. Taken together they imply that while the FSA, and DH ministers, will need advice from independent scientists, they will also need advice from consumer representatives.

Responsibility for deciding what is and what is not proportionate should be assigned to ministers in the DH, rather than to officials in the FSA. At the very least, the Secretary of State for Health should provide explicit guidance to the FSA on how risk assessments should be conducted, and how risk and benefits should be juxtaposed.

We recommend that when the UK is represented at meeting of the Codex Ailmentarius Commission, the FSA should accompany and advise those representatives, but that the FSA itself should not serve as the UK's representative.

Codex needs to be reformed, and that reform could be effectively accomplished if the Guiding Principles set out in this White Paper were applied to global policy-making institutions.

The FSA should represent UK consumers to groups such as the EU's Scientific Committee for Food and to the joint World Health Organisation (WHO) and United Nations Food and Agriculture Organisation (FAO) bodies such as the Joint Expert Committee on Food Additives (JECFA) and the Joint Meeting on Pesticide Residues (JMPR).

The FSA's research budget should be determined by reference to an estimate of what the proper discharge of its responsibilities will require, not by reference to MAFF's current patterns of expenditure.

The Agency's officials and the members of independent expert advisory committees should have an explicit role to play in the identification of research requirements and priorities, since they will be best placed to identify the research sensitive uncertainties with which policy-makers will have to grapple.

We support the creation of an independent Advisory Committee on Animal Feedingstuffs. This should give advice on hazards which may arise from the actions of the rendering industry.

We propose that the reference in Para 4.19 to "contaminants in feeding stuffs" should be construed as including both chemical and micro-biological contaminants, and a further bulleted point should be added referring to the rendering industry.

We recommend that, as part of mechanisms through which the FSA is made accountable, targets should be set, and progress should be evaluated by reference to those targets.

We recommend that a large majority of the members of the Commission should be entirely independent of the food industry.

Part 6.21 specifies that the Chief Executive of the Agency should be appointed by the Commission and should be a Crown Office Holder rather than being a civil servant. We recommend that not only the Chief Executive of the Agency but also those occupying the next layer down in the Agency should be Crown Office Holders rather than civil servants.

While the FSA should provide a secretariat to the Commission, the Agency should not be able to prevent others having direct access to its Commission.

The consistent application of the underlying principles of ensuring (i) the separation of consumer protection regulation from industrial sponsorship, (ii) the independence of those providing expert advice from industry and from ministers, and (iii) ensuring fully open, accountable and unbiased policy-making together imply that the public health issues concerning pesticides, veterinary medicines and BSE should be decided separately from, and prior to, all other aspects of agricultural and commercial policy-making. The latter policy issues should consequently be determined within a framework that was previously set by reference to the former.

The FSA, acting on the advice of dedicated expert committees concerned with the public and occupational safety aspects of pesticides and veterinary medicines should provide a framework within which agriculture departments and their agencies should separately determine all other aspects of plant protection and animal health and welfare policies.

The entire membership of the expert committees advising on protecting public and occupational health from risks from pesticides, veterinary medicines and BSE should be chosen by the FSA and DH, without the involvement of Agriculture Departments or their agencies.

If the proposals of the White Paper are implemented without applying the regime of openness and freedom of information to the VMD, the VPC, the PSD and the ACP, and repealing the confidentiality and secrecy provisions Section 118 of the Medicines Act, then public confidence in policy-making in this area will be seriously compromised and undermined.

The framework of regulation on agriculture should therefore be sufficiently rigorous to ensure that all animals and animal products entering the food supply are pathogen-free, rather than merely contaminated at low levels.

The FSA should therefore receive advice from a dedicated independent expert group on protecting the general public and farm and abattoir workers from BSE and other TSEs, and Agriculture Departments should separately be advised on veterinary aspects of TSEs, operating within the framework of policy set by the DH acting on the advice of the FSA. The best way of ensuring that the ban on exports of UK beef is lifted is to demonstrate that the entire UK agricultural sector is operating within an independent and rigorously determined public health policy regime. As long as the suspicion remains that the public protection aspects of BSE policy are being, or could be, subordinated to commercial interests.

The proposals contained in the document entitled *Food Standards Agency—Place of Nutrition* which was issued on 14 October 1997 by Mrs Tessa Jowell MP and Jeff Rooker MP were markedly clearer than the ones contained in the White Paper, and they are more obviously consistent with the underlying Guiding Principle of the White Paper than those in Paras 5.11 to 5.13. We therefore propose that the arrangements outlined in last autumn's paper should replace those in the White Paper. We recommend in particular that COMA should report directly to the FSA, and that the FSA should provide a secretariat to COMA.

Members of expert advisory committees should not be permitted to act as paid consultants to firms and industries whose products they are required to evaluate. That general rule should apply to all the expert committees which will advise the FSA and DH in relation to food standards and food safety.

Introduction and Guiding Principles

In the opening paragraph (Para 1.1) there is a clear recognition that a restoration of public confidence will only be achieved after two prior conditions have been met. Firstly the ways in which these issues are handled have to be opened up and strengthened, and consequent improvements in food safety have to be demonstrated. The creation of a Food Standards Agency (FSA), vital though that will be, will not by itself be sufficient to restore public confidence in food safety, food standards and public policy-making. We propose that the "The essential aim of the Agency is the promotion and protection of public health in relation to food". We can foresee problems if the Agency is restricted to the protection of public health. It might mean, for example, that the Agency would be unable to concern itself with the efficacy of foods designed to promote rather than protect health such as fortified foods, functional foods and supplements.

The White Paper succeeds in addressing the vast majority of the problems to which it is intended to provide an answer. There are, however, a few marginal respects in which it could be significantly improved. The proposals being made here are intended to ensure that a handful of anomalies are rectified so that all the details become consistent with the underlying principles and the overall design.

The White Paper and the Guiding Principles emphasise several vital considerations. Para 1.2 indicates that protecting and promoting the public interest should predominate over all other aspects of food policy-making. That paragraph also emphasises that FSA should function: "at arm's length from Government and independent of sectoral interests" and in an open and transparent fashion (cf para 3.2.1). In other words, it will be vital that food standards and food safety policy advice will be provided by an Agency which will be entirely and demonstrably separated from commercial pressures and from day-to-day control by government departments.

Para 1.11 of the White Paper acknowledges that conflicts of interest occurred in MAFF as a consequence of the dual character of MAFF's remit. The White Paper has responded by grasping the nettle and insisting that regulatory policy-making should be entirely separated from considerations such as industrial sponsorship (Para 1.12), and that policy-making should take place in a fully open and accountable fashion. It will therefore be important to ensure that, in so far as agriculture departments contribute to the food standards and food safety policy-making processes, it will be important that they do so in ways which do not allow those conflicts of interest to be re-introduced or to risk undermining consumer protection.

The Importance, and Limits, of Scientific Evidence

Guiding Principle 2 recognises that policy-making should be based upon "the best available scientific advice". That is very important because a great deal of policy over the last 20 years has been based on relatively flimsy scientific grounds, which were often assembled and selected in a biased fashion. Para 2.6 is also right, however, to emphasise that an unbiased scientific account often necessitates acknowledging that the available scientific evidence is incomplete and inconclusive. Risk assessments inevitably, therefore, do involve scientific uncertainties, and consequently an element of political judgement is involved in reaching decisions on the best course of action. Consequently, Guiding Principle 2 needs to be interpreted in the light of the remarks in Para 2.6. Taken together they imply that while the FSA, and DH ministers, will need advice from independent scientists, they will also need advice from consumer representatives. Scientific experts will need to explain what the available evidence does, and does not, indicate about safety and hazards, risks and benefits. The main contribution of consumer representatives will not be to provide answers to scientific questions, but to ensure that the questions which are asked, and answered, include those which are especially important for consumers. Arrangements along those lines will be consistent with the guidance referred to in Para 2.14 from the Office of Science and Technology on the use of scientific advice in policy-making.

Proportionality

Guiding Principle 3 states that "the Agency's decisions and actions should be proportionate to the risk". We are nervous about enshrining this principle without extreme care. It could easily have been used to justify the kind of decisions which were taken over BSE, from the mid-1980s to mid-March 1996. Only when strong evidence of a link between new variant CJD and the consumption of BSE-contaminated material emerged in 1996 would the initial calculations have appeared erroneous. That said, we accept that in the real world, inevitably some definition of proportionality will need to be addressed. We argue that judgements about proportionality cannot be settled solely by reference to scientific and technical considerations, they involve instead political judgements. It is also inappropriate to assume that scientists do not have political agendas. Accordingly, it would be more appropriate to assign the responsibility for deciding what is and what is not proportionate to ministers in the DH, rather than to officials in the FSA. At the very least, the Secretary of State for Health should provide explicit guidance to the FSA on how risk assessments should be conducted, and how risk and benefits should be juxtaposed.

International Considerations

Paragraph 3.16 indicates that the FSA should represent the UK on the Codex Commission. This proposal differs from that originally made by Prof James who recommended that the FSA should accompany and advise those who represent the UK, but not that the FSA itself should serve as the UK's representative.

The role of Codex is, unfortunately, problematic precisely because it is designed and operated on a model which too closely resembles the UK's arrangements for policy-making which this White Paper rightly insists on replacing. Codex is an institution which is supposedly responsible at the global level for reconciling the interests of consumer protection with industrial sponsorship. In practice, Codex very much like MAFF, has subordinated considerations of consumer protection to those of industrial promotion, especially through trade liberalisation. Codex is crying out for reform, and that reform could be accomplished if the Guiding Principles set out in the White Paper were to be applied to global policy-making institutions.

Until Codex is reformed, however, the representative of the UK government to Codex has to bring two sets of considerations (consumer protection on the one hand and the promotion of the interests of the British food industry on the other) to bear on the UK contribution to the negotiating process. Those representatives ought therefore to receive two separate sets of advice, one from the FSA and the other from Agriculture Departments, but the FSA should not be responsible for representing the interests of British firms in trade or commercial policy-making. The FSA should, however, represent UK consumers to groups such as the EU's Scientific Committee for Food and to the joint World Health Organisation (WHO) and United Nations Food and Agriculture Organisation (FAO) bodies such as the Joint Expert Committee on Food Additives (JECFA) and the Joint Meeting on Pesticide Residues (JMPR).

The recognition in paragraph 3.16 that greater transparency at Codex and greater consumer involvement are important are particularly welcome. The current position is that Codex operates in an extremely opaque fashion; one which reproduces many of the short-comings that have afflicted policy-making in the UK, and to which the White Paper is a response.

Codex takes decisions, for example in relation to food additives and pesticides. Those decisions are based on the prior advice of joint World Health Organisation (WHO) and United Nation Food and Agriculture Organisation (FAO) bodies such as JECFA and the JMPR. JECFA and JMPR play a pivotal role in global food standards and food safety policy-making, yet their meetings take place behind closed doors, they accept unpublished data and collude in keeping those data out of the public domain. Members of those committees are free, as far as the WHO and FAO are concerned, to act as paid consultants to the companies whose products they are required to evaluate. There is, moreover, no requirement or expectation that such commercial links are disclosed to the secretariats of those committees, to the members of those committees or to the general public. There is no consumer representation on JECFA nor JMPR, and those committees have consistently refused to allow consumer representatives to attend either as participants or as observers. There are provisions for consumer representatives to attend Codex meetings but groups such as Consumers International (formerly known as the International Organisation of Consumers Unions) are inadequately resourced to enable them to participate effectively. Consumer representatives even complain, rightly that the documentation for Codex meetings is massive, impenetrable and arrives too late for an informed response to be prepared. The kinds of reforms envisaged in this White Paper should therefore be extended to all related international fora such as those operating at the EU level, and global bodies such as the WHO and FAO, and to Codex and bodies acting within, and under the auspices of, the WTO.

Research Policy at the FSA

The emphasis given, for example, in paragraphs 3.23–3.34 to the FSA developing its own research and surveillance programme is extremely important.

The magnitude of the research funds to be transferred from MAFF to the FSA needs to be scrutinised carefully. MAFF has a well-deserved reputation for re-categorising research expenditures in an opportunistic and self-serving fashion. MAFF's claim, for example, that research expenditure on food safety had risen sharply in the aftermath of Mrs Currie's comments on *salmonella* in eggs could only be sustained by discreetly re-categorising "fisheries" research as falling under the heading of "food safety".

In a later section of this document we recommend that responsibility for all the consumer protection and public health aspects of pesticides, veterinary medicines and BSE should be transferred to the FSA. If the research funds currently being devoted to those fields were added to the sums already identified as appropriate for transfer to the FSA the net figure for the FSA's research budget would be far closer to £50 million than the £25 million mentioned in paragraph 3.32.

One of the reasons, however, why the White Paper, and the reform process of which it is a part, is necessary is because MAFF has historically under-invested in research into those parts of food science and technology which could have been relevant to consumer protection and public health. MAFF's inadequate research effort in this area will not necessarily provide the FSA with sufficient resources effectively to discharge its responsibilities. The FSA's research budget should rather be determined by reference to an estimate of what the proper discharge of its responsibilities will require.

The discussion in paragraph 3.29 says however that, whenever "borderline" research programmes (ie between agriculture and food) are identified, decisions will be taken on a case-by-case basis to decide whether they should be transferred to the FSA or remain with MAFF. What that paragraph failed to specify is who will decide. We propose that all those decisions should be taken by the Secretary of State at the Department of Health.

Paragraph 3.27 emphasises correctly that the FSA's research policy should be formulated and implemented in an open and consultative fashion. There have been intervals in the post-war period in which MAFF has convened research consultative committees. In the period since 1979, however, MAFF twice abolished those consultative committees because they insisted on criticising MAFF's research policy. That occurred despite the fact that only industrial groups were being consulted, consumers were never represented at those committees.

Millstone has argued that one of MAFF's crucial failings was that it has simply failed to articulate a coherent research policy.[14] MAFF has been stumbling alone with clusters of separated research programmes and projects, most of which have failed to address many of the most important policy-sensitive scientific uncertainties with which policy-makers have had to struggle.

The fact that the FSA will be required to operate in a fully open fashion should entail that under the new regime the scientific uncertainties which confront policy-makers will be acknowledged rather than neglected or concealed. That should create the conditions under which it will be possible to articulate and implement a proper food standards and food safety research agenda. If that is to happen, the experts who will be Agency's officials and the members of independent expert advisory committees should have an explicit role to play in the identification of research requirements and priorities.

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[14] Fishing for coherence in MAFF's drifting research, *Research Fortnight*, Vol 1, No. 12, 12 April 1995, p 12; and "MAFF brief still muddled". *Research Fortnight*, Vol 1 No. 21, 20 September 1995, p 3.

Animal Feedingstuffs

We support the creation of an independent Advisory Committee on Animals feedingstuffs to oversee this vital sector. We think this should include the rendering industry which is long overdue a thorough review.

The proposals in paragraph 4.14 *et seq* relating to animal feedingstuffs are very welcome. One important related issue remains un-addressed, however, and that concerns the regulation of rendering plants. What happens in the animal feedstuffs industry has substantial ramifications along the food chain, but the animals feedstuffs industry is itself, in part, dependent on what happens in rendering plants. It might be appropriate therefore to extend the remit of the FSA and the DH to cover rendering plants, in so far as their activities have implications for food standards and food safety. That could be accomplished either by giving the new independent advisory committee on feedingstuffs a remit to cover the rendering industry, or alternatively by providing the FSA with a new independent expert advisory committee on risks arising from the actions and output of the rendering industry. To ensure that protection of public health is always the primary consideration, and that it is never subordinated to commercial interests, whenver the secretariat of an advisory committee is provided jointly by the FSA and Agriculture Departments, it should be the FSA which takes the leading role.

The remit of the Agency on these issues has been outlined in the bulleted points at the end of Para 4.19. We propose that the reference to "contaminants in feeding stuffs" should be construed as including both chemical and micro-biological contaminants, and a fifth bulleted point should be added referring to the rendering industry.

Paras 4.33 to 4.70

The proposals on food hygiene in Para 4.33 to 4.36, and those concerning Meat and Milk Hygiene in Para 4.37 to 4.43 are welcome. So too are those of Food-borne Illness in Paras. 4.44 to 4.52. So too are those for novel foods and processes, on food additives, chemical contaminants in food, radiological safety, food intolerance, emergencies and water in Chapter 4.

Structure and Accountability of the FSA

Chapter 6 on the Structure and Accountability of the FSA contains many welcome proposals, especially those relating to the independence of the Agency from commercial pressures and direct day-to-day interference from ministers. The provisions in Para 6.15 are especially welcome in opening up the policy-making process to proper democratic accountability and oversight. Paragraph 6.6 refers to the membership of the Commission, and on page 35 indicates that a majority of the Commission's member should be "from a wider public interest background without any specific affiliation". The meaning of that expression is not entirely clear, but on previous occasions Ministers had indicated that a large majority of the members of the Commission would be entirely independent of the food industry. We know we are not alone in preferring the latter formulation.

We strongly supported the proposal in the initial James document of May 1997 that food industry interests should be no more than one third of the Commission and all committees and sub-committees of the Commission and of the Agency. If the Agency is to win and retain public support, it must be clear that representatives of the food industry must never be in a position to dominate policy-making.

Para 6.21 specifies that the Chief Executive of the Agency should be appointed by the Commission and should be a Crown Office Holder rather than being a civil servant. We recommend that that arrangement should be extended at least to the next layer down in the Agency.

Chapter 6 implies that the FSA would provide the secretariat to the FSA's Commission. While that may be appropriate, it will be important to ensure that the FSA will not be able to prevent other organisations from putting papers to the Commission. Undoubtedly the FSA would be able to provide a commentary or a response to papers submitted by other organisations, but the Agency should not be able to prevent others having direct access to its Commission.

The James report recommended that the Agency should establish clear targets and should monitor progress towards those targets. Those targets might include, for example, reducing the incidence of food borne bacterial infections, ensuring the eradication of the TSE pathogens from the UK food supply. The White Paper, however, makes no reference to such targets, we recommend therefore that, as part of mechanisms through which the FSA is made accountable, targets should be set, and progress should be evaluated by reference to those targets.

Three Anomalies: Pesticides, Veterinary Medicines and BSE

This section of this submission deals in a closely-related fashion with three areas of policy-making, namely pesticides, veterinary medicines and BSE. The common characteristic which they share is that they are all anomalous against the background of the guiding principles of the White Paper, and they are anomalous in similar ways. The first two fail to conform to the criteria of independence, separation and openness, while the third fails on the first two of those three criteria.

Pesticides and Veterinary Medicines

Para 4.5 states that "Food safety on the farm is, however, inextricably linked with other aspects of farming practice and policies". The use of the word "inextricably" provides an ingenious but misleading rhetorical flourish. It draws on the fact that considerations of food safety have numerous ramifications for other aspects of food and agricultural policies, and vice versa, but it misleadingly suggests that consumer protection aspects of pesticides and veterinary medicines policy-making must be located within the same institution as that which deals with the commercial aspects. That suggestion endorses that status quo, and leads the White Paper into a set of anomalous, unnecessary and inappropriate proposals.

The attempt to retain (as much as possible of) the status quo is reinforced by the remark later in the same paragraph when it refers to consideration having been given to assigning responsibility for "all aspects of farming practices" to the Agency. That would obviously be inappropriate, but ministers are not confronted by a choice between keeping all aspects of pesticides and veterinary medicines policy together in the FSA or together in MAFF. The alternative, which is consistent with the Guiding Principles, is to separate them.

The consistent application of the underlying principles of ensuring (i) the separation of consumer protection regulation from industrial sponsorship, (ii) the independence of those providing expert advice from industry and from ministers, and (iii) ensuring fully open, accountable and unbiased policy-making together imply that the public health issues should be decided separately from, and prior to, all other aspects of agricultural and commercial policy-making. The latter policy issues should consequently be determined within a framework that was previously set by reference to the former.

When discussing pesticides and veterinary medicines (in Para 4.23) reference is made to the "independent" ACP. As currently constituted, and as envisaged in the proposals contained in the White Paper, the ACP cannot be counted as independent of Ministers or of the Pesticides Industry. If the ACP, and similar expert advisory committees such as the VPC, are to be serviced by a secretariat wholly or partly provided by an Agency (such as the PSD or VMD) that is owned by MAFF, the genuine separation of regulation from sponsorship (as envisaged in the Guiding Principles) will be compromised and undermined. Para 4.29 suggests, merely, that the FSA will be empowered to select one member of the ACP and the VPC. This will not be sufficient to ensure that the Guiding Principles are applied.

The application of the Guiding Principles implies that the entire membership of the expert committees advising on protecting public and occupational health from risks from pesticides, veterinary medicines and BSE should be chosen by the FSA and the DH, without the involvement of Agriculture Departments or their agencies.

One of the least convincing sentences in the entire White Paper is the final sentence of Paragraph 4.25. The claim is made that: "it was widely felt that . . . 'separating public health considerations from other aspects of policy-making' . . . risked weakening the evaluation process as a whole." We are not told who expressed such feelings, but it is certain that those "feelings" were expressed by industrial representatives not by consumer or public health groups. The key remark is false precisely because, over the last 20 years, the process of evaluating pesticides and veterinary medicines has been weakened because these two sets of considerations have not been separated. It is vital that public health considerations are separated from industrial and commercial aspects of policy-making in order to ensure that the evaluation process is strengthened. Only if those arrangements are changed, and if those considerations are separated will the basic Guiding Principles of the White Paper have been applied in these key areas.

The evaluation of pesticides and veterinary medicines from the point of view of protecting public and occupational health cannot be guaranteed unless the expert advisory committees and the regulatory policy-making bodies to which they report, are separated from commercial and industrial sponsorship. That would not be achieved by allowing MAFF to remain even partly responsible for those matters. Furthermore, as long as ministers continue to permit members of committees such as the ACP and VPC to act as paid consultants to the firms whose products they are being required to evaluate, the requirement for independence will not be satisfied.

It is sometimes alleged by civil servants, industrialists and even ministers that the requisite expertise does not exist outside of industry and commerce. On issues of chemical and biological safety, that is simply false. It will always be important for industrial representatives to have opportunities to contribute information and opinions to the policy-making process, but they should not themselves provide the personnel or the resources on which policy-makers rely.

The claim that all aspects of food safety on the farm are inextricably linked with other aspects of farming practice (Para 4.5) is interpreted as implying that they need to be decided together rather than separately.

MAFF's own experience shows, however, that precisely that kind of separation can be achieved, and makes sense. The regulation of food additives has traditionally been handled by two separate expert advisory committees. The Food Advisory Committee was asked to make judgements about whether or not there was a need for particular additives, and only if the FAC was satisfied on that point, did they request the DH's Committee on Toxicity to evaluate the safety and toxicity of the additives. That traditional arrangement provides a straightforward model which could be readily applied when the FSA is established. The FSA, acting on the advice of dedicated expert committees concerned with the public and occupational safety aspects of pesticides and veterinary medicines should provide a framework within which agriculture departments and their agencies should separately determine all other aspects of plant protection and animal health and welfare policies.

WOULD THE FSA HAVE AN "EFFECTIVE" VETO?

One of the practical difficulties which would confront the FSA, if the arrangements envisaged in Para 4.6 of the White Paper were implemented, is that while the FSA would have a nominal right to "intervene if it needs to where farming practices impact on the safety of food" but in practice its ability to do so would substantially depend on the Agency's access to information. The VMD (and the Veterinary Products Committee) are currently governed by the confidentiality provisions of Section 118 of the Medicines Act, and there is no indication in the White Paper that those provisions will be repealed before the Agency is established. The PSD and the ACP are not covered by analogous legislation, but MAFF's policy has been and remains, that access to pesticides toxicity data is tightly restricted, and often all that is available comes in the form of highly digested summaries. If the proposals of the White Paper are implemented without applying the regime of openness and freedom of information to the VMD, the VPC, the PSD and the ACP, and repealing the confidentiality and secrecy provisions Section 118 of the Medicines Act, then public confidence in policy-making in this area will be seriously compromised and undermined.

Para 4.29 suggests that the FSA will have an "effective veto" over the ACP/VPC and similarly over the VPC and the VMD, and in relation to BSE policy. In practice, however, it would establish a nominal veto but not one which could effectively be exercised. The proposed arrangements under which the FSA would exercise oversight of policies of agriculture departments raise serious constitutional and political problems. The White Paper envisages (eg in Paras 4.8, 4.11 and 4.22) that discharging those oversight responsibility could necessitate the head of the FSA over-ruling Agriculture Ministers. That is both unrealistic and improper. Firstly, it is improper to assign to an unelected official responsibility for potentially vetoing decisions of a Minister, especially where that Minister works in a separate department. Constitutional propriety might be better served if responsibility for over-ruling Agriculture Ministers was assigned to the Secretary of State for Health.

An altogether preferable arrangement would be achieved if the FSA and the DH first set a regulatory framework to protect public and occupational health, and within those parameters Agriculture Ministers were separately responsible for determining agricultural and commercial aspects of policy on pesticides, veterinary medicines and BSE. Para 4.8 emphasises that the FSA should not be "distracted from its essential aim by taking on operational responsibility for policy areas . . . [such as] . . . economic or animal health and husbandry issues." Our proposal has the advantage of meeting this point, but in a way which is conistent with the Guiding Principles.

The remark in Para 4.26 that producers of veterinary medicines might seek authorisation from the VMD's overseas competitors is worrying. It implies that the VMD should be competing with other countries to issue product licences. Pharmaceutical companies may well prefer to obtain a licence in the UK from the VMD rather than from analogous bodies in other EU Member States, and thereby to gain entry to the entire EU Single Market, but that is more likely to be because the VPC and the VMD can be counted on as a "soft touch" than because of the strictness and rigour of their evaluations. The provisions of the Single European Act permit Member States to exclude pesticides, veterinary medicines, and food products from their markets if there is evidence that they may be hazardous to public or environmental health. Consequently there would only be public health grounds for seeking to persuade companeis to gain entry to the EU market through the UK if there were evidence that the regimes of other Member States are too permissive.

BSE

The proposals in Paras 4.12 and 4.13 on BSE are essentially similar to those for pesticides. The legislative provisions of the Medicines Act do not apply, but some vital information is still not freely available.

An analogy with pesticides would not, however, be entirely appropriate. With pesticides and with veterinary medicines, policy is made on the assumption that the only materials which are allowed are ones for which a residual threshold level can be set below which foods can safely be consumed. For example, Maximum Residue Levels have been set for pesticides in some foods. As far as the BSE pathogen is concerned, there is no evidence of a threshold of exposure below which it can safely be ingested. The pivotal policy expression therefore is "eradication" not "reduction". The framework of regulation on agriculture should therefore be sufficiently rigorous to ensure that all animals and animal products entering the food supply are pathogen-free, rather than merely contaminated at low levels.

A regulatory regime should, therefore be established by the FSA and the DH to ensure that all food products sold in the UK and EU are free of contamination with the TSE pathogens. That regime should then provide the framework within which the Agriculture Departments, and the industries for which they will be responsible, should operate. Accordingly, BSE is another case where public health decision-making should be clearly separated from, and prior to, industrial and commercial agricultural policy-making. The FSA should therefore receive advice from a dedicated independent expert group on protecting the general public and farm and abattoir workers from BSE and other TSEs, and Agriculture Departments should separately be advised on veterinary aspects of TSEs, operating within the framework of policy set by the DH acting on the advice of the FSA.

The best way of ensuring that the ban on exports of UK beef is lifted is to demonstrate that the entire UK agricultural sector is operating within an independent and rigorously determined public health policy regime. As long as the suspicion remains that the public protection aspects of BSE policy are being, or could be, subordinated to commercial interests, the reversal of the current EU restrictions will be all the harder to achieve.

Nutrition

The proposals in Paras 5.11 to 5.13 concerning the division of responsibilities in relation to nutrition as between FSA, the DH and MAFF are not entirely clear.

At a stakeholders' meeting at the DH on 14 October 1997, convened by Mrs Tessa Jowell MP and Jeff Rooker MP to discuss these issues, a paper was presented entitled *Food Standards Agency—Place of Nutrition,* a copy of which is attached. The proposals contained in that document were markedly clearer than the ones contained in the White Paper, and they are more obviously consistent with the underlying Guiding Principle of the White Paper than those in Paras 5.11 to 5.13. We therefore propose that the arrangements outlined in last autumn's paper should replace those in the White Paper.

For example, the provisions of Para 5.11 imply that the Committee on Medical Aspects of Food Policy (COMA) would fit naturally into the FSA, as Professor James had recommended, and as the paper issued on 14 October 1997 envisaged. Since COMA is concerned with the dietary aspects of chronic diseases such as cardiovascular disease and cancer the FSA would provide the appropriate location for it. The White Paper proposes, however, that the secretariat for COMA should be shared by the FSA and the DH, and it gives no indication as to which, if either, would be in the lead. We recommend therefore that COMA should report directly to the FSA, and that the FSA should provide a secretariat to COMA.

Membership of Expert Advisory Committees

At several points above, we have argued that members of particular expert advisory committees should not be permitted to act as paid consultants to firms and industries whose products they are required to evaluate. That should be established as a general rule to apply to all the expert committees which will advise the FSA and DH in relation to food standards and food saftey. Unless a rule to that effect is established and implemented, the Guiding Principles will be undermined.

Once again, we state our enthusiasm for the Food Standards Agency as a long-overdue reform of food governance. We are aware of the Government's concern that the plans should be rigorously scrutinised to avoid pitfalls now. In that spirit, we hope that these suggestions and comments are useful. We would be happy to discuss them in person, should you wish.

2 March 1998

APPENDIX 80

Letter to the Committee Chairman from the UK Halal Poultry Supplier Group (C125)

Re: Food Safety Evidence Session Tuesday 10 February 1998 10.30 am

My Secretary and I attended this session under your excellent chairmanship. I should be grateful if I may add some comments to your deliberations.

We represent the poultry companies involved in the production of Halal poultry for consumption in the UK. The Muslim community is of some 2.5 million people and the annual Halal poultry market is around £120 million in value.

As you will appreciate we operate within the strict requirements of the Koran and find the general Muslim preference is for their product to be presented in NYD (New York Dressed) form.

This is a fully plucked bird, with the head and neck intact to demonstrate accuracy of Halal slaughter, where the visceral contents are retained in the carcass with no incision made to the skin to retain the very low microbial count within the carcass.

This has been a traditional practice over many centuries to ensure extended shelf life and minimum risk to the consumer.

We wish to inform you that due to Government change in legislation, the Poultry Meat Farmed Game Bird and Rabbit Meat (Hygiene and Inspection) Regulations 1995, this practice of supplying NYD from factories that produce over 10,000 birds per year, has been banned.

As you know, this effectively impacts on the larger poultry factory operating at levels of 60–80,000 birds per week who by their very size and structure are very strictly monitored by the Meat Hygiene Service and full veterinary inspection and EU licensing.

The prime purpose of this letter is to inform you and your committee of the very serious health position that now exists due to the Government action of preventing the Muslim customer from purchasing the product of choice from such fully licensed and inspected operations.

Government has approved the following position:

- ban the production of NYD from factories of over 10,000 birds per year on the basis that the product is "unsafe."
- the ACMSF (Advisory Committee on the Microbiological Safety of Food) advised Government after its meeting on 18 September 1997 that there were inherent risks in such poultry and game entering the market and that the future of this trade should be reviewed.
- Government has allowed the continued production of NYD poultry from units that produce less than 10,000 birds per year. Government in effect is stating that the NYD product is perfectly safe (a point incidentally that the MLC endorsed in their presentation on 10 February 1998 committee).
- the under 10,000 bird per year business is not subject to the regulations as applicable to the larger over 10,000 bird factory. There is no veterinary inspection on a day to day basis and our own knowledge from the trade of over 35 years clearly indicates such NYD is now available in numbers from the under 10,000 bird per year plant that seems greater than would appear possible. Equally the discipline of hygiene and full temperature control is not the norm!

In our opinion this is presenting a position that completely contradicts the published aims of food safety and especially as the professional full veterinary controlled EU licensed factories have been banned in prefrence to the non-inspected, low hygiene status, no veterinary control under 10,000 birds per year units.

You will appreciate both the risk and our dilemma.

We have in fact asked the MAFF Meat Hygiene Division on numerous occasions, as to who was the professional expert on all matters NYD on the ACMSF committee, so that we can have access to their scientific evidence and also have the opportunity to consider the total contents of the debate, but unfortunately the Meat Hygiene Division seem unable to disclose this information.

You will appreciate that the points made by the MLC on 10 February 1998 endorse the practical experience and knowledge of many years and it is only logical that we wish to be made aware of any new scientific knowledge that may have been presented to the ACMSF.

It is fair to say of course, that if such material was indicating a serious position, then why ban NYD only from the over 10,000 birds per year and not from those under 10,000 birds per year?

Equally why ban from factories that are fully licensed, veterinary controlled and MHS inspected but yet allow continuation from plants that do not comply to such standards?

The logic surely is to apply a total ban or leave it to the consumer to decide on their own choice of supply.

We would very much appreciate your kind consideration of the contents of this letter and if you require any further information please do not hesitate to contact myself or the secretary of the UK Halal Poultry Supplier Group.

12 February 1998

APPENDIX 81

Memorandum submitted by the Meat Training Council (C126)

1. BACKGROUND

The Meat Training Council is recognised by Government as the National Training Organisation for the meat and poultry sector (beyond the farm gate to independent and multiple retail, including the abattoir sector). It is also the main awarding body for the sector in England, Wales and Northern Ireland for National Vocational Qualifications (NVQs) and examination courses, and a partner awarding body in Scotland for SVQs with the Scottish Qualifications Authority. I attach some further details [not printed].

One of your Committee's terms of reference in this enquiry appear to have some bearing on the work of the Council.

POLICY RECOMMENDATIONS

21. The Council is committed to a fully trained and formally certificated workforce throughout the meat and poultry supply chain. This will do much to improve understanding in employees at every level of the importance of food safety issues. Knowledge and understanding alone is not enough, however. See attached articles from Meat and Poultry News (June and July 1997) commenting on the training issues raised, but not completely disposed of, by the Pennington Report.

NVQs which are at one and the same time:

- — assessed in the workplace;
- — based on standards of occupational competence accepted by the industry, professional and trade bodies;
- — contain requirements for knowledge and understanding which underpin workplace performance occupationally specific; and
- — seem to the Council to an important facet of improving employees' knowledge of and performance in tasks which have a food safety content.

2.2 Takeup of meat specific S/NVQs is on the increase, but would still account for less than five per cent of the relevant workforce. There is a long way to go. Encouragement needs to be given to assisting the industry in implementing S/NVQs.

The Council can only do so much.

What is needed is action on two fronts:

- — The Council has urged MAFF to influence DfEE in moving TECs and LECs away from funding training measures now largely directed at 16-17 year olds (the so called "Guarantee Group"). 16 and 17 year olds are not generally felt to be employment options, at least in the processing sector. The Council has met with Ministers of DfEE, DoH and MAFF to make this point.
- — More financial support is needed, at least in the short term, to assist training in the sector. Again, this point has been made to Ministers, (see attached correspondence).
- — Legislation, regulations and guidance with a bearing on training from MAFF to the industry should give a much higher profile to competency-based qualifications. This is the way in other Government departments, against which MAFF sometimes appears backward looking.

2.3 Food hygiene training and certification, certainly at the basic (ie foundation level) needs to be occupationally specific and partly based on the assessment of competence in the workplace.

The Council is currently devising a meat safety certificate which will do both.

2.4 There needs to be more and better training packages linked to S/NVQs or units especially in the poultry processing and meat manufacturing areas.

The MHS has a training function with its own staff and through them to abattoir and cutting plant staff. It has, relatively speaking, substantial resources.

It needs to collaborate more closely with industry organisations including the Council, when initiating ideas and developing training packages. In this way limited resources can be made to go further.

2.5 The Council was asked by the MAFF/industry working groups to devise a training strategy for the meat and poultry sectors. Some of these recommendations also appear in that strategy.

3. HYGIENE ASSESSMENT SCORES (HAS)

There is some evidence emerging that HAS awareness training of the sort provided by the Council has a beneficial effect on HAS scores.

Takeup of such training has, however, been patchy. OVS need to recommend such training (conducted by third parties for preference, so that controversial and sensitive issues may be properly addressed) to the operators of low-scoring plants. Good operative training plays a major role in improving HAS scores.

PENNINGTON REPORT

The Council awaits consultation on draft legislation to implement key recommendations of Pennington. It particularly looks forward to being consulted on the training aspects. It is felt that the competency of individuals should play a key part in any licensing regime for retailers, not merely promises and enforcement. Training and formal certification can play an important part in self-regulation.

5. SCIENTIFIC KNOWLEDGE AND INDUSTRY PRACTICE

There appears to be a noticeable gulf between the state of scientific knowlege of food safety issues and industry practice, especially on the red meat abattoir side. The food research associations do an excellent job in running courses for the industry, but have had little success in attracting technical staff from abattoirs. This is partly a matter of expense. Ways need to be found of bringing the expertise of the Food ra's to meat plants. Research in British universities specialising in food sciences tends to focus on animal welfare issues (where Britain has a world lead) rather than on food safety issues (human welfare).

Perhaps a conference should be sponsored with the aim of improving channels for technology transfer as between the scientific community and the industry itself.

6. THE SCHOOL CURRICULUM

Pennington recommended that food hygiene should be taught in schools. So it should, but it cannot be taught in a vacuum. Food and drink issues must regain their once important place in the school curriculum. The Qualifications and Curriculum Authority and its Scottish equivalent (SQA) should be influenced. Careers advice must include information on the food processing sector.

Once again, thank you for the opportunity of contributing written evidence to the Committee. Please do not hesitate to contact me if I can provide any additional information or comment.

27 February 1998

APPENDIX 82

Supplementary Memorandum submitted by the Scottish Consumers Association for Natural Food (C127)

The consumption of GM-maize, altered at the level of its life-controlling genetic chemistry, will result in repeated and uncontrollable epidemics of infectious agents.

1. In last 40 years, we have seen an increase in the practice of food processing and preservation, in parallel with a huge rise in chronic disease, especially of the gastro-intestinal tract. This will be exacerbated by the comsumption of fundamentally unnatural maize. In the resulting state of physiological imbalance, people will succumb to infections previously only associated with the immune-compromised.

2. Antibiotic medicines which once saved lives are already being renderd redundant by over-use. This will be exacerbated by the ubiquitous presence of antibiotic resistance genes in our food-chain and environment. Antibiotic resistance genes, because they are entering our diet from maize on this enormous and unprecedented scale, will recombine within disease-causing microbes, making them increasingly untreatable.

3. Unnatural constituents in our food chain have already led to powerful new diseases. This will be exacerbated when pathogens cross species boundaries through the gateway of the unbalancing effect of the foreign engineered genes. The disease-causing micro-organisms of tomorrow engendered by gene-manipulated maize are unknown today.

We are creating a lethal tripartite cocktail of susceptibility to disease, drug-resistant microbes and novel infectious agents.

Gene-manipulated maize is present, in many concealed forms, in a huge proportion of our diet. Current human health and safety legislation demands that all such food products be withdrawn from the food chain immediately.

9 March 1998

APPENDIX 83

Supplementary Memorandum submitted by the Health and Safety Executive (C128)

INTRODUCTION

1.1 *About this memorandum*

1.1.1 This memorandum presents the response of the Health and Safety Executive (HSE) to the request by the Agriculture Committee of the House of Commons to hear about the "procedures and guidelines used by the HSE in assessing risk in its areas of responsibility, and particularly in how the estimation of significance of risks is traded off against the financial costs of reducing them."

1.1.2 The memorandum is in 4 section:

- an introduction outlining the aims of HSE and what it does, the nature of the regulatory regime for occupational health and safety, and the role of risk assessment in HSE's activities;

- a description of the procedures and guidelines HSE applies as the regulator of occupational health and safety, together with the conceptual tolerability of risk framework that HSE uses for risk based decision making, including how costs and benefits are taken into account in decision making;
- some observations on how HSE's procedures and guidelines and its tolerability of risk framework could assist the new Food Standards Agency in meeting its objectives on risk as set out in the Government's White Paper[15], and
- the conclusions.

1.1.3 Should the Agriculture Committee like to hear more about HSE's approach to risk we would be very willing to provide further information. We are also very willing to provide details of our approach to those charged with establishing the principles and protocols which the new Food Standards Agency will use for risk assessment and risk management.

1.2 *Aims of the Health and Safety Executive*

1.2.1 The overall purpose of HSE, and of the tripartite Health and Safety Commission (HSC) which it serves, is "to ensure that risks to people's health and safety from work activities are properly controlled."[16]

1.2.2 The existence and functions of HSC and HSE (collectively HSC/E) derive from the Health and Safety at Work etc Act 1974 (the 1974 Act). The aims of HSC/E are to protect the health, safety and welfare of employees and to safeguard others, particularly the public, who may be exposed to risks from industrial activity.

1.2.3 Under the 1974 Act the responsibility to protect the health, safety and welfare of people at work and the health and safety of others who might be affected by work activities, is placed on those directly engaged—primarily employers, the self-employed, suppliers, etc HSC/E are there to inform, stimulate and guide those on whom responsibilities are placed, and others concerned with health and safety, to achieve higher standards; and in particular to:

(a) formulate policy and define standards, eg by:
  - proposing reform of existing legislation, through regulations and approved codes of practice under the 1974 Act;
  - issuing guidance; and
  - co-operating with other standard setting bodies;

(b) participate through negotiation in relevant standard setting in the European Union and in other international fora;

(c) promote compliance with the 1974 Act and other relevant legislation, in particular by:
  - inspection, advice and enforcement in undertakings where HSE is the enforcing authority;
  - where appropriate, issuing licences or approvals; and
  - proposing and keeping under review arrangements for the allocation of enforcement responsibility as between HSE and other enforcement bodies (eg local authorities) with an eye to satisfactory and consistent standards;

(d) carry out, publish and promote research; and investigate accidents and industrial problems, disseminating findings as appropriate;

(e) provide specific services related to HSC's main functions, eg an Employment Medical Advisory Service; and

(f) contribute to the process of open and democratic decision-making by promoting an accountable, transparent, proportionate, consistent and targeted approach to health, safety and welfare issues, in particular by:
  - providing advice and information to Ministers as required;
  - making as much information as practicable open to the public;
  - co-operating with regulatory bodies in related fields;
  - representing UK interests in EU and other inter-Governmental fora; and
  - encouraging well-informed public discussion of the nature, scale and tolerability of risk.

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[15] *The Food Standards Agency: a force for change,* Cm 3830, January 1998.

[16] See, for example, *Plan of work for 1997/8,* Health and Safety Commission, ISBN 0-7176—1409-3.

1.3 *What HSE does*

1.3.1 HSE advises and assists HSC, which is responsible to the Secretary of State for the Environment, Transport and the Regions, and also to other Secretaries of State, for the administration of the 1974 Act. HSC's statutory functions include proposing and setting necessary health and safety standards. HSC and HSE are distinct statutory bodies.

1.3.2 HSE services a network of advisory committees which advise HSC. Some of these committees deal with particular hazard areas and some with particular industries. Their main function is to recommend standards and guidance and, in some cases, to comment on policy issues confronting HSC or to recommend an approach to a new problem. Each includes a balance of employer and employee representatives and, where appropriate, technological and professional experts.

1.3.3 HSE also has responsibility for securing compliance with health and safety legislation in over 540,000 establishments and numerous transitory work sites (eg construction sites and fairgrounds)—around 13.2 million people.

1.3.4 HSE has some 4,000 staff, including inspectors, policy advisers, and scientific, technological and medical experts. Of these some 350 are in the Health and Safety Laboratory, an in-house Agency of HSE.

1.3.5 HSC/E's work in ensuring proper control of work-related risks to people's health and safety involves:[17]

(a) providing laws and standards to ensure that people are protected on a comparable basis at reasonable cost, and to standardise hazardous plant and substances for international trading purposes;

(b) protecting workers and the public from risks of accidents and to their health, through inspection and assessment of hazardous processes and plant, investigation of accidents, ill-health and complaints about working conditions; and

(c) protecting workers and the public from remoter risks of catastrophic accidents and giving public reassurance that risks are properly controlled through information and responsiveness to public concerns.

1.3.6. HSE is also instrumental in promoting coherence and consistency on risk assessment and risk management across Government via the Inter-departmental Liaison Group on Risk Assessment (ILGRA), for which it provides the Chairman and secretariat[18]. HSE hopes that in due course the Food Standards Agency will be represented on ILGRA in its own right (as, of course, the Department of Health and the Ministry of Agriculture Fisheries and Food are already).

1.3.7 HSE does not have front line responsibility for food safety. It is, however, directly involved in situations where there is risk of occupational exposure to food-borne pathogens, eg BSE agent in abattoirs or *E.coli* 0157 in laboratories. In these situations it can seek advice from the Advisory Committee on Dangerous Pathogens (ACDP), one of HSC's advisory committees. The secretariat of ACDP is provided jointly by HSE and the Department of Health.

1.4 *Regulatory regime*

1.4.1 As mentioned in paragraph 1.2.3, under the 1974 Act the primary responsibility to protect the health, safety and welfare of people at work and the health and safety of others who might be affected by work activities, is placed on employers, the self-employed, suppliers, etc. The regulatory regime is founded on a goal setting approach—a wide, general duty in the 1974 Act that health and safety should be secured at all times, subject only to the qualification that control measures should be adopted so "far as is reasonably practicable".

1.4.2 This qualification recognises that if an activity is undertaken there can be no assurance of absolute safety. Compliance with the qualified duty sets the balance between the risks and benefits from the work activity. The general duty is supported by:

- a requirement in the Management of Health and Safety at Work Regulations 1992[19] that employers and the self employed undertake a risk assessment to identify suitable and sufficient preventive measures to reduce risks;
- regulations dealing with specific hazards, industries, processes, substances, situations or persons which set standards to be achieved; and
- approved codes of practice (ACoPs) and guidance, which provide more detail on how risks can be reduced in specified circumstances, and so on how the balance of costs and benefits is to be achieved in practice.

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[17] See also *Annual report and accounts 1996–97*, HSC, ISBN 0-7176-1454-9.

[18] *The use of risk assessment in Government Departments*, first ILGRA report to Ministers, HSE 1996.

[19] The Management of Health and Safety at Work Regulations 1992, implement the EU Framework Directive 89/391/EEC. The Regulations are supported by the Approved Code of Practice *Management of health and safety at work*, and by guidance, eg HSE's free leaflet *5 steps to risk assessment*.

1.4.3 This approach ensures that the regulatory regime is adaptable to technological and socio-economic change.

1.4.4 In very many instances the work activity can be made healthy and safe by the adoption of measures that reduce the risks as "low as reasonably practicable" (ALARP), and so meet the qualified duty. In other instances, however, the work activity may not be allowed because it is so inherently and transparently unsafe that detailed estimation of risk is unnecessary, or because individuals would be inequitably exposed to risk of severe harm. Other activities may not be admissible because, although the chance of harm to any one individual is low, the totality of harms to all who may be exposed is considered too great for society to regard as tolerable. HSE's tolerability of risk framework (see Section 2.1) provides a tool for the regulator to judge what risks are unacceptable, what risks are negligible, and when risks have been reduced ALARP.

1.5 *Role of risk assessment in HSE's activities*

1.5.1 Risk assessment is pivotal to HSE's approach. First, risk assessment is an essential requirement on employers and the self-employed that enable the risk creators to meet the fundamental requirement in the 1974 Act to secure health and safety so far as is reasonably practicable.

1.5.2 Secondly, risk assessment is a fundamental element in the approach of HSE as a regulator in formulating policy and in developing a regulatory regime for occupational health and safety that is accountable, transparent, proportionate, consistent and targetted. The procedures and guidelines that HSE applies in using risk assessment in policy formulation and in development of the regulatory regime are the main focus of this memorandum.

2. Tolerability of Risk

2.1 *Conceptual framework*

2.1.1 HSE's tolerability of risk framework (TOR) is a decision-making tool that guides its policy formulation and regulatory risk management activities. It starts from the principle that there is no sharp line between safe and unsafe. This principle is reflected in the 1974 Act (paragraphs 1.4.1–1.4.2) and, we believe, in the intuitive, common-sense view that considers risks to be:

- unacceptable and so banned by the regulator; or
- negligible by reference to everyday experience; or
- tolerable in exchange for the benefits of the activity that gives rise to the risks.

2.1.2 A vertically increasing scale of risk shows the relationship between negligible, tolerable and unacceptable risks (Figure 1). The boundary between the unacceptable and tolerable regions represents an upper level of risk beyond which risk cannot be justified save in extraordinary circumstances. The boundary between the tolerable and broadly acceptable represents a lower limit or cut off point where risk does not worry people or cause them to alter their behaviour in any way. In between the two lines is a region where, subject to the provisos in paragraph 2.1.3 below, society will tolerate risk in order to secure benefits.

2.1.3 "Tolerable" in this context does not mean acceptable. Risks are only tolerated if:

- those affected are told about the nature and level of the risks;
- the risks are kept as low as is reasonably practicable (ALARP); and
- the risks are reviewed periodically to see if they can be eliminated or further reduced.

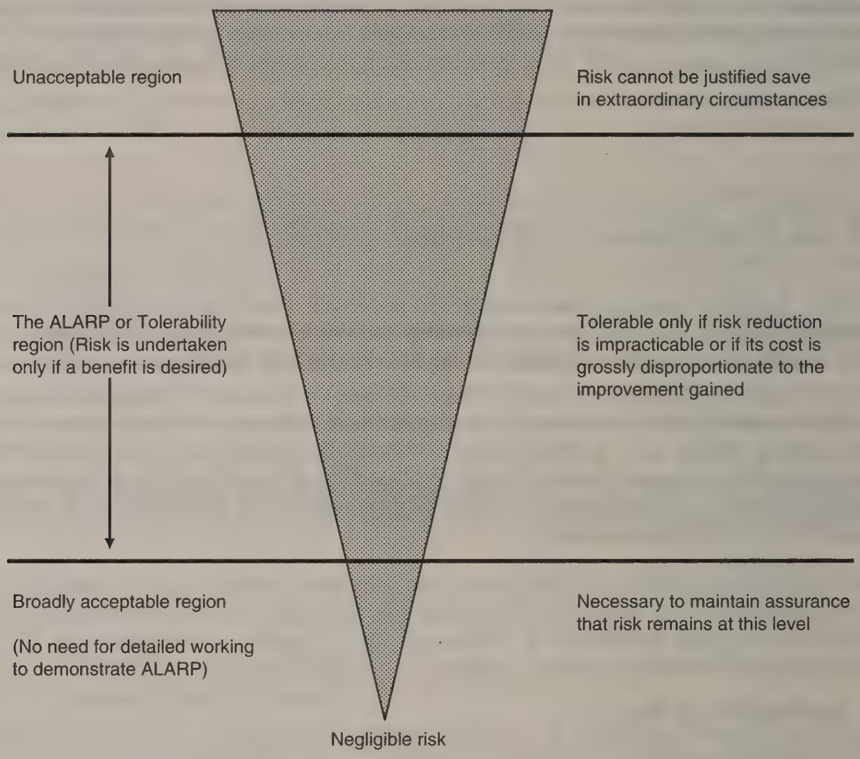
2.1.4 Risk, however, is not just an issue of scientific fact and judgement about the likelihood of physical harm (important though this element is)—it also embraces value judgements that reflect how individuals perceive the risk and how the risk is perceived to impact on society as a whole. The latter is often associated with risks which, were they to be realised, could provoke a socio/political response. Typical examples within HSE's remit are nuclear power generation, railway travel or genetic modification of organisms. The vertical scale of risk in Figure 1, therefore, is a combination of:

— individual risk; and

— societal concerns.

Figure 1

Illustration of HSE's tolerability of risk (TOR) framework


Unacceptable region
Risk cannot be justified save in extraordinary circumstances
The ALARP or Tolerability region (Risk is undertaken only if a benefit is desired)
Tolerable only if risk reduction is impracticable or if its cost is grossly disproportionate to the improvement gained
Broadly acceptable region
(No need for detailed working to demonstrate ALARP)
Necessary to maintain assurance that risk remains at this level
Negligible risk

2.1.5 Although HSE seeks to be sensitive to the perceptions of risk and the societal concerns associated with an issue, we are aware that society's perceptions of harm are often based on graphic imagery, and we strive to ensure that we take action on the basis of a balanced assessment of all the facts, and not on transitory shifts in value preferences. In assessing what constitutes societal concern HSE takes full account of the democratic and Parliamentary processes.

2.1.6 The ordinary meaning of risk also embraces the notion of willingness to incur the chance of adverse consequences in the expectation of a benefit (as does the regulatory regime—see paragraphs 1.4.1–1.4.2). Risk, therefore, reflects both the likelihood that some form of harm may occur and a measure of the consequence.

2.1.7 HSE frequently distinguishes between hazard and risk by describing a hazard as an intrinsic property or disposition of anything to cause harm, and risk as the chance that someone or something that is valued will be adversely affected by the hazard. The distinction enables HSE to stress the need for control measures to address risks by reducing the chance of harm. But in practice HSE sometimes attaches more weight to the consequences than to the likelihood. Putting more weight on the consequences blurs the distinction between hazard and risk and, in the limit of sole concentration on the consequences, the distinction disappears.

2.1.8 Under the 1974 Act HSC has an onus to consult stakeholders when proposing regulations or ACoPs. As a matter of policy it has been decided that such consultation would articulate the levels of risk (in the full sense) regarded as unacceptable and negligible (ie the levels of risk that correspond to the upper and lower horizontal lines in Figure 1), and to indicate the extent to which duty holders must reduce tolerable risks (ie how close to the lower line, or "how safe is safe"). The TOR framework promotes the articulation of these criteria in a transparent way that can be applied consistently between different risks. In certain risks (and on the basis of numerous assumptions). More importantly, even where numerical criteria exist, they are only guidelines in coming to risk management decisions that embrace both individual risk and societal concerns.

2.1.9 Sound risk management decisions have to be made on the basis of a full definition and characterisation of the risk problem (including the uncertainties), a thorough examination of the options and constraints for risk management, and systems for evaluating the effectiveness of the action taken. HSE's TOR framework sits, therefore, in a conceptual procedure for informing and reaching risk-based decisions (paragraphs 2.3.1–2.3.20 below).

2.1.10 HSE is continuing to develop its TOR framework and its approach to risk-based decision making. The TOR framework was first expounded in 1988 in the context of nuclear power and revised in 1992[20] following public consultation. This memorandum incorporates a generalisation of the TOR framework which HSE intends to publish for public consultation and discussion later this year. Further information on the TOR framework and how it is evolving is available from HSE.

2.2 *Criteria*

2.2.1 In general, criteria for risk-based decision making can be based on considerations of:

(a) equity, where individuals have unconditional rights to certain levels of protection;

(b) utility, where a balance is struck between the benefits of measures to reduce risks and the costs of the measures; and

(c) technology, where the level of protection is that afforded by relevant best practice.

2.2.2 One of the advantages of the TOR framework (Figure 1) is that it embodies all three types of criteria:

- equity-based criteria apply to risks falling in the upper and lower regions;
- utility-based criteria often predominate for risks falling in the middle region; and
- technology-based criteria permeate all three regions.

2.2.3 In practice the boundaries between the unacceptable/tolerable and tolerable/negligible regions for a particular hazard derive from consultation between the regulator and the stakeholders, and take account of the results of risk assessment and the values of society at large. They often take the form of:

(a) expressions of unacceptable and broadly acceptable levels of risk based on policy considerations; or

(b) "level playing field" considerations arising from, eg EU or other international obligations, with implicit or explicit consideration of costs and benefits; or

(c) expression of risk based on considerations of practicality as to what is in practice achievable, again with implicit or explicit consideration of costs and benefits.

2.2.4 There are, however, a few categories of risk for which HSE, on the basis of its wealth of experience accumulated over the years and in consultation with stakeholders, has developed across the board numerical risk criteria for the boundaries between the unacceptable/tolerable and tolerable/negligible regions. These criteria apply to occupational risks entailing fatalities. For individual risk of death to workers the upper limit of the boundary between the unacceptable and the tolerable regions is one in a thousand per worker per annum for any substantial category of workers for any large part of a working life. In practice this limit rarely bites, as the existing control measures almost always result in levels of risk that are typically two orders of magnitude lower. Indeed, HSE would have adopted a lower figure to reflect this reality, were it not for an international agreement on maximum levels of risk for a particular group of workers. For members of the public who have a risk imposed on them "in the wider interest", the upper limit is an order of magnitude lower—one in ten thousand per person per annum, but again in practice the actual levels of risk are almost always well below this upper limit.

2.2.5 At the other end of the spectrum HSE equates an individual risk of death of one in a million per annum for both workers and the public to a very low level of risk that is usually considered broadly acceptable.

2.2.6 HSE also has numerical criteria for societal concerns arising from the risk of multiple fatalities from a single incident in a "major hazard" site, such as a chemical plant where substantial quantities of flammable or toxic substances are stored or used. In this case the criteria derive from examination of the level of risk that society decided to tolerate from a major accident affecting the population surrounding the industrial installations at Canvey Island on the Thames. This led to an upper limit of one in five thousand for the risk of an accident causing the death of 500 people or more in one event from an industrial activity. With the aid of certain assumptions this figure can be converted into criteria lines that can be used in a technique (using FN curves) that allows the estimation of societal concerns generated by events that cause multiple fatalities.

2.2.7 Often, however, these criteria for individual risk and societal concerns are not directly applicable to a particular risk because the end point of concern is not death and the available information does not readily allow a relationship to be made between exposure to the risk and probability of harm. An example is exposure to chemical substances, where the end points of concern are often chronic effects such as cancer, occupational asthma or dermatitis, and the absence of data and lack of a clear understanding of the biological processes involved means it can be difficult to relate exposure over time to probability of specific harm. Annex 2 shows how the TOR framework applies to the setting of occupational exposure limits for airborne hazardous substances. Dose is used as a surrogate for risk. The absence of numerical estimates of probability does not detract from the value of the TOR framework as a conceptual model for rationalising the standards for airborne hazardous substances, or for any other risks.

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[20] The tolerability of risk from nuclear power stations, HSE 1992, ISBN 0-11-886368-1.

2.2.8 Surrogates for societal concerns are sometimes used. Following consultation with stakeholders[21], HSE uses estimates of individual risk as surrogates for societal concerns about multiple fatalities when advising local planning authorities in connection with new developments (eg housing or leisure facilities) in the vicinity of major chemical plants.

2.3 *Procedures and guidelines*

2.3.1 The TOR framework sits within a conceptual procedure for informing and reaching risk-based decisions which HSE applies when considering any risk. The procedure has 6 steps:

1. Deciding whether the issue is one for HSE/C.
2. Defining and characterising the issue.
3. Examining the options available and their merits (including cost benefit analysis).
4. Adopting decisions.
5. Implementing the decisions.
6. Evaluating the effectiveness of the action taken.

2.3.2 In practice the six steps are iterative, one stage informing another; and success at each stage depends on involving the stakeholders with the aim of achieving a wide consensus. In the end, however, HSC/E as regulators have to take the final decision where consensus is not possible because, eg, different stakeholders hold opposite views based on deep rooted beliefs.

2.3.3 For the purposes of this memorandum steps 2, 3 and 4 embrace the procedures and guidelines that HSE uses in assessing risk and in making risk management decisions. Paragraphs 2.3.4 to 2.3.20 below summarise the key points in each of these stages.

Defining and characterising the issue

2.3.4 Inevitably the manner in which the issue arises can influence how the issue is framed for action. The more important ways are from:

- pressure of events and experience in terms of accident and ill-health statistics and reports of investigations into particular accidents;
- public perceptions that there is a problem to address;
- feedback that existing arrangements are not fit-for-purpose;
- political moves in the EU or internationally to which a response is needed; and
- arising intelligence on new hazards, eg from new technologies.

2.3.5 Framing the issue often points to the need for new information to fully characterise the risks. The technique for risk characterisation is risk assessment. This involves identifying all the hazards associated with the risk issue, and then expressing the likelihood that harm will actually be experienced by a specified population, and what the consequences would be.

2.3.6 The process of gathering and refining risk information is underpinned by much research both within and outside HSE. Almost 25 per cent of HSE's total resources are currently devoted to establishing sound information and intelligence on risk. The science underpinning HSE's policies and practices is extensively exposed to the normal scientific process of peer review, and HSE makes provision for commissioning research on the basis of independently generated ideas, so bringing fresh perspectives to bear. Such a deliberate engagement between HSE and the scientific community helps to dispel areas of lack of awareness of hazards or of other factors influencing the issue in question.

2.3.7 A risk assessment is essentially a tool for extrapolating from available data on experience of harm, or for compressing much scientific information and judgement into an objective estimate of the risks. The policy process then couples the scientifically-based statements about risks with policy judgements about the appropriate approach to their control.

2.3.8 The risk assessment identifies both the individual risks and the societal concerns arising from the hazards, and so is much broader and more detailed than that required by duty holders under the Management of Health and Safety at Work Regulations (paragraph 1.4.2 above). As part of the iterative nature of the procedure, one outcome is often the identification of good practice for dealing with the risk.

2.3.9 Risk assessment is permeated by uncertainty. HSE seeks to be as open as possible so that thinking can be exposed to alternative views at as early a stage as possible, in accordance with the 1997 policy statement by the Chief Scientific Advisor [22]. The effects of uncertainty on the risk assessment are estimated by sensitivity analysis, and the outcome used as a means to prioritise research. The extent of uncertainty can affect subsequent decision making/

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[21] *Risk criteria for land use planning in the vicinity of major industrial hazards*, HSE, ISBN 0-11-885491-7; currently under review.

[22] *The use of scientific advice in policy making*, issued by the Office of Science and Technology, March 1997.

Examining the options available and their merits

2.3.10 The risk management options can range from doing nothing to introducing measures (regulatory or non-regulatory) to eliminate the problem altogether, or to reduce it to one which people are prepared to live with.

2.3.11 The available options for HSC/E include:

- providing more information and guidance to duty holders;
- undertaking publicity campaigns so those exposed to risk can exert their influence;
- engaging the assistance of intermediaries in the health and safety system;
- promoting stronger enforcement of existing legal provisions;
- exerting pressure for heavier penalties on transgressors;
- developing and pursuing a negotiating line to be taken in EU or other international fora;
- targeting action on those able to control the risks; and
- in the last analysis, proposing new measures that are proportionate to the risks, eg new approved codes of practice, goal-setting regulations or if necessary prescriptive regulations.

2.3.12 In assessing options HSE's experience is that it is instructive to examine:

(a) what constitutes good practice;

(b) the legal, technical or other constraints;

(c) any adverse consequences associated with a particular option; and

(d) whether there is a need to adopt the precautionary principle in line with the UK's sustainable development strategy[23].

2.3.13 An important part of the examination of the options is to undertake a cost benefit analysis (CBA) to establish the benefits of each viable option and the cost that would be incurred in implementing it. HSE's approach to CBA is set out in section 2.4 below. The remaining paragraphs in this section complete the summary of the relevant parts of HSE's conceptual procedure for informing and reaching risk-based decisions.

Adopting decisions

2.3.14. At this point in the procedure all the information gathered in the previous stages is reviewed with a view to selecting the most appropriate option for controlling the risks. In HSE's experience the key to successful risk management is whether the stakeholders affected by the issue feel comfortable with:

(a) the quality and comprehensiveness of the information gathered, and the results of the risk assessment including the way uncertainty has been handled and the plausibility of the assumptions made; and

(b) how the economic, technological and socio-political considerations have been integrated into the decision-making process.

2.3.15 Success in meeting these conditions is not always easy to achieve. Openness and the involvement of stakeholders are important factors. For (a) above HSE's experience is that it helps to.

- find out and focus on the uncertainties that matter;
- explain why a particular method was chosen, in preference to others, for estimating the risks; and
- be open on the science, assumptions and other critical inputs that have contributed to the risk estimate.

2.3.16 For (b) above, success lies in adopting decisions which most accurately reflect the ethical and value preferences of society at large on which risks are unacceptable, tolerable and negligible. At times this might require focusing more on the consequences of harm occurring from a hazard than on the likelihood that the hazard will be realised (see paragraph 2.1.7). Where the uncertainties are high and the consequences are the potential for irreversible and/or serious damage HSC/E will consider adopting the precautionary principle and err on the side of safety by adopting a high level of regulatory control, eg prescriptive regulations such as notification or licensing regimes as appropriate.

2.3.17 In deciding how to apply the precautionary principle HSE takes into account:

(a) the consensus among experts of the likelihood of the consequences being realised; and

(b) the level of societal concerns engendered by the risk.

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[23] *Sustainable Development: the UK Strategy*, 1994, ISBN 0-10-124262-X. The precautionary principle is expressed "where there are significant risks of damage to the environment, the Government will be prepared to take precautionary action to limit the use of dangerous materials or the spread of potentially dangerous pollutants, even where scientific knowledge is not conclusive, if the likely balance of costs and benefits justifies it".

2.3.18 If the expert consensus is that the likelihood of realising the consequences is high and the level of societal concern is also high, HSE will act to put in place an appropriate high level of control, including, if necessary, proposals for prescriptive regulations.

2.3.19 If the expert consensus is that the chance of realising the consequences is high, but the level of societal concern is low, ie people are not unduly concerned, HSE may still conclude that a high level of control is needed. In these circumstances particular attention would be devoted to explaining to the stakeholders the reasons for the action. HSE may also press for a high level of control where the expert consensus is that the likelihood of realising the consequences is low but the societal concerns are high. In this case a high level of control allays the societal concern, provides public reassurance and allows industry to benefit from the technology that would otherwise give rise to the societal concern (eg genetic manipulation).

2.3.20 Finally there may be situations where, notwithstanding the uncertainty, the expert consensus is that the likelihood of realising the consequences is low and the level of societal concern is also low. In these cases HSE will usually take no action, but will remain open to any new information that reduces the uncertainties and prompts re-evaluation of the risk assessment and the options for risk management.

2.3.21 Section 2.6 below indicates how the TOR framework helps in making risk management decisions that embrace all facets of risk.

2.4 Balancing Costs and Benefits

2.4.1 This section discusses procedures for the formal analysis of costs and benefits of risk reduction measures. The TOR framework recognises that, in many cases, the decision whether or not to adopt a risk reduction measure involves the consideration of many factors, including weighing up the advantages and disadvantages (or benefits and costs). Formal analysis may provide valuable information to decision-makers, although such analyses may not always be cost-effective or necessary. The analyses can vary in their complexity and detail, and can range from the quantified to the purely qualitative. HSE uses one such assessment methodology—cost benefit assessment (CBA)—to inform decisions on proposed legislation. It should be noted, though, that whatever degree of formality or complexity is involved in the technical assessment, it is only an aid to decision-making.

2.4.2 A CBA is a structured analysis of all the desirable and undesirable consequences of a proposed measure to society as a whole, where these effects are measured in comparable units (usually money values). Essentially, the analysis proceeds by, first, mapping out all the anticipated impacts of a proposal. The costs of risk reduction measures (in terms of expenditure or staff time) can usually be quantified and expressed in monetary terms. The benefits of risk reduction measures will principally arise from an expected reduction in the number of accidents/cases of ill health. In addition, there may be cost savings to the duty holder and environmental benefits. Again, in principle, these benefits are quantified, and money values attached to them.

2.4.3 Often, though, benefits cannot be reliably quantified, and the final CBA will be a mixture of costs and benefits valued in money terms, costs and benefits quantified in non-monetary terms (eg exposure levels), and costs and benefits described in purely qualitative terms. The decision maker then has to judge whether costs outweigh benefits, as well as the weight to place on cost-benefit considerations in making a regulatory decision. Annex 1 contains further information on CBA methodology.

2.4.4 Since 1982, it has been HSC/E policy to prepare a CBA in support of all new proposals for health and safety legislation expected to have a significant impact on business. This is consistent with current Cabinet Office guidance, although HSC/E's policies in this area considerably predate central government initiatives. CBAs are also prepared for European Directives under negotiation, in order to inform the UK negotiating strategy.

2.4.5 The CBA informs decisions taken by HSC on the content of regulatory proposals, and by Ministers on whether they should be implemented. They also play a role in HSC/E's wider process of stakeholder involvement. A good deal of consultation with industry and others is usually required to collect the necessary information on potential impacts. The draft CBA (or a summary of it) is always included in the formal consultation document, and the full analyses are available to the public.

2.4.6 In principle, duty holders also need to perform some form of analysis of advantages and disadvantages, or costs and benefits, when judging whether specific risk reduction measures are reasonably practicable. Full CBA is very much the exception: its use is limited to a small number of industries (eg the railways, the nuclear power industry) where major capital projects need to be evaluated, and where quantified risk assessment and financial appraisal techniques are well established. Other, less complex, procedures may be used more widely, such as risk matrices. In practice, however, consideration of costs and benefits is usually realised through the adoption of relevant good practice (see below).

2.5 GOOD PRACTICE

2.5.1 Before considering how the TOR framework is actually applied, this section introduces the concept of good practice, which HSE has found to be powerful and useful, both for duty holders and regulators.

2.5.2 Good practice represents, in effect, the consensus between regulators, technical experts, duty holders, safety representatives, etc, as to what:

- constitutes proportionate action to control a given hazard, taking account of what is technically feasible, the balance of costs and benefits and, if necessary, other factors to alleviate societal concerns; and
- a tolerable level of residual risk.

2.5.3 Good practice, therefore, represents the balance agreed between stakeholders of when risk is reduced as low as reasonably practicable (ALARP), and so sets a standard in terms of the control measures needed to reduce risk for a given hazard. Where good practice is established duty holders can be reasonably confident that applying good practice satisfies their legal duty without the need to undertake a detailed risk assessment.

2.5.4 Authoritative sources of relevant good practice included the requirments of legislation approved codes of practice (ACoP), codes and other guidance produced by Government, together with standards produced by standard making bodies (eg BS, CENELEC, ISO) and guidance produced by an industry or occupational sector (eg trade federation, professional institution, sports governing body), provided the guidance has gained general acceptance in the safety movement that they do represent good practice.

2.5.5 Good practice in occupational health and safety embraces a well established hierarchy of measures for the prevention of risk, which starts with eliminating risks and moves through combating the risk at source, applying collective protective measures rather than individual protective measures, and generally applying sound engineering principles such as inherently safe design.

2.5.6 HSE is very active in formulating good practice (usually in the form of guidance and ACoPs) or, where appropriate, encouraging others to produce guidance on behalf of a sector of industry.

2.6 APPLYING THE FRAMEWORK

2.6.1 The starting point in applying the TOR framework is that HSE expects duty holders under occupational health and safety legislation to have in place control measures to address all significant hazards arising from the conduct of their undertakings. In most instances this is achieved by having in place authoritative good practice, which in effect ensures that risks are tolerable and that they have been reduced ALARP by appropriate control measures.

2.6.2 There will, however, be cases where good practice:

- was not identified as an option at step 3 in the conceptual procedure for informing and reaching risk-based decisions (paragraph 2.3.1). This will always be the case for hazards that are new or not well studied, or where the circumstances in which people interface with the hazard are untypical or exceptional; and
- is found to be inadequate to control the risk as low as is reasonably practicable (ALARP).

2.6.3 In these circumstances the conceptual procedure for informing and reaching risk-based decisions is triggered to see whether alternative options can be found to reduce the risks ALARP. Where a suitable one is found HSE would advocate its adoption.

2.6.4 Occasionally, however, going through the iterative process fails to reveal a suitable option to control the risks to levels within the tolerable region because either:

(a) the individual risks are so high and their control so difficult that it is not possible to find control measures that are adequate because a point is reached where further expenditure of effort to control the risk is out of proportion to the reduction in the risk thereby achieved; or

(b) it is not possible to allay the societal concerns that the risk engenders, perhaps because the consensus view is that the measures will not be observed, or because there are doubts as to whether the risk should be entertained at all.

2.6.5 In these circumstances the risk is in the unacceptable part of the TOR framework. In HSE's experience, occupational activities or processes that give rise to individual or societal risks which cannot be reduced to a tolerable level are relatively rare because:

- advances in technology mean that most risks can now be controlled; and
- societal concerns can often be allayed by the introduction of progressively more stringent regulatory instruments, ie guidance, ACoPs or prescriptive legislation, culminating if necessary in the introduction of process regulations such as notification or licensing systems.

2.6.6 Nevertheless, where (a) or (b) in 2.6.4 are found to apply, HSE considers banning the process or activity. Where banning would be an incomplete solution because the hazard is already widespread (eg removal of blue asbestos prior to demolition of buildings), remedial action of some kind has to be triggered regardless of cost.

Risk Communication

2.6.7 As mentioned in paragraph 2.3.2, when following the procedure for informing and reaching risk-based decisions and applying the TOR framework, good communication with stakeholders is vital. At different stages in the procedure the purpose of the communication may be, for example, to listen, inform, promote action or influence behaviour, and the communciation may take place at different levels. Sometimes the outcome of the decision making process (step 4) will be risk management action in the form of a risk communication exercise intended to influence behaviour. Clearly this requires sound risk communication policies and strategies.

2.6.8 Under the auspices of ILGRA HSE, in collaboration with other Government Departments including the Department of the Environment, Transport and the Regions, the Department of Health and HM Treasury, has commissioned a risk communication benchmark study to produce, from a series of case studies and the literature, a set of generic principles for Government risk communication and associated guidance. The principles and guidance should be available in a few months (summer 1998). On behalf of ILGRA and in collaboration with the Economic and Social Research Council, HSE is also in the process of commissioning research to understand better why some risks catch the public imagination and are amplified, leading eg to loss of confidence in institutions and calls for regulation or protective action, whilst other risks are largely ignored.

International negotiations

2.6.9 As in many other areas, occupational health and safety standards increasingly stem from EU or other international agreements. HSE uses the TOR framework and the conceptual procedure for informing and reaching risk-based decisions to inform the UK negotiating line.

Application of the TOR framework in a specific case—occupational exposure to chemical substances

2.6.10 The TOR framework provides a valuable guide to risk-based decision making for any risk, regardless of whether the level of risk can be expressed as a probability. Annex 2 shows how the TOR framework and the conceptual procedure for informing and reaching risk-based decisions are applied to the setting of occupational exposure limits for chemical substances.

Further information

2.6.11 HSE would be happy to provide further information on the application of the TOR framework to other occupational hazards and risks.

3 FOOD SAFETY POLICY

3.1 *Applicability of the TOR framework*

3.1.1 HSE believes that its TOR framework (section 2.1) and its conceptual procedure for informing and reaching risk-based decisions (section 2.3) is robust and universally applicable to any risk. We also believe that the TOR approach provides a sound basis for risk-based decision making that is accountable, transparent, proportionate, consistent and targetted.

3.1.2 HSE considers that its TOR framework and procedure for informing and reaching risk based decisions is compatible with the joint approach of the Food and Agriculture Organisation of the United Nations (FAO) and the World Health Organisation (WHO) to the use of risk assessment in setting food standards[24].

3.1.3 We believe that it is for the new Food Standards Agency (FSA), working to its Commission and in consultation with its stakeholders, to establish its own policies and risk-based criteria, and to decide whether it wishes to build on the TOR framework. Notwithstanding this, HSE and ILGRA would regard it as essential that the policies and criteria the FSA adopts should be mutually consistent with those of other Government regulators, and with those of HSE. To do otherwise may lead to different regulators adopting conflicting approaches in relation to the same activity. Paragraph 1.3.6 mentions the role of ILGRA in this respect, and we note the reference in the Government's White Paper[25] to participation by the FSA in ILGRA in the context of risk communication.

3.1.4 Nevertheless, on the basis of the proposals in the Government's White Paper, we feel it would be helpful to point to a number of areas where the FSA's approach to risk issues would be greatly strengthened by adoption of a decision making framework along the lines of HSE's TOR model. In the following section the numbers in brackets refer to paragraphs in the White Paper.

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[24] *Application of risk analysis to food standards issues*, report of the joint FAO/WHO expert consultation, March 1995.

[25] *The Food Standards Agency: a force for change*, Cm 3830, January 1998.

3.2 *The Food Standards Agency's approach to risk*

3.2.1 The White Paper makes several references to the need for the FSA to be consistent and transparent in its approach (eg 2.1). The range of hazards within its remit icludes pathogens in live animals, animal feedingstuffs, chemical contaminants, food additives, food hygiene, novel foods, and food irradiation as well as pesticide and veterinary medicine residues in food (3.5). These are presently subject to separate regimes so, as the White Paper acknowledges (2.2), there is a need to "draw up and communicate an overall approach to risk analysis and decision making which will enable it to maintain a coherent and consistent policy". It is just these concerns that originally prompted HSE's TOR framework and which continue to spur its development.

3.2.2 Some of the hazards that will fall under the remit of the new Agency are intimately associated with high levels of societal concern. Notable examples are genetically modified organisms, food irradiation and BSE. Clearly the overarching strategy that the new Agency adopts will, like HSE's TOR, have to accommodate both individual risk and societal concerns.

3.2.3 The White Paper notes (2.6) that complete freedom of risk is unattainable, and that in the context of food, "safety" and "wholesomeness" are related to levels of risk that society regards as reasonable in the context of, and in comparison with, other risks in everyday life. Where "safe threshold levels of intake in relation to an identified hazard" cannot be identified "risk from exposure should be reduced to as low a level as is reasonably practicable" (2.7). As explained in section 2.1, these ideas lie at the heart of the TOR framework.

3.2.4 The importance of risk-based criteria against which to judge and interpret risk estimates was illustrated by the recent study by consultants on behalf of the Spongiform Encephalopathy Advisory Committee to quantify the risks to people from the consumption of beef products possibly contaminated with BSE infectivity contained in dorsal root ganglia. The risk assessment revealed a very low risk of infectivity of around 1 in a billion (10^{-9}), with a wide uncertainty[26]. In the absence of a framework of food safety the consultants presented the results in the context of HSE's risk criteria, in particular for the boundary between the tolerable and negligible regions of the TOR diagram (ie 1 in a million, of 10^{-6} respectively—see paragraph 2.2.5 above).

3.2.5 The White Paper also draws attention to the need in assessing and managing risks to take careful account of the expectations of the consumer, and in particular the costs of higher levels of safety (2.6), and of the need to balance costs and benefits (2.9). Again these ideas are incorporated in the TOR approach.

3.2.6 As the White Paper points out, many food standards derive from EU or other international agreements that stem from single market or trade negotiations (eg 3.11–3.18), and are incorporated into secondary legislation in the form of, for example, maximum levels of contaminants in food. These standards do not correspond to levels of risk at the upper limit of the range of tolerability but, depending on their basis, are akin to the maximum exposure level (MEL) and occupational exposure standard (OES) used in HSE's regime for the control of exposure to substances in the workplace. Annex 2 of this memorandum shows how these limits and standards fit within the TOR framwork.

3.2.7 The White Paper sets out the proposed role of the new Agency (with the Department of Health) in providing authoritative information and practical guidance on nutrition, and in defining the health education message on nutritional issues (5.6–5.12). As outlined in paragraph 2.6.7 of this memorandum, use of risk communication to influence behaviour is one of a wide range of risk management actions that can be triggered by application of HSE's TOR framework and conceptual procedure for informing and reaching risk-based decisions.

3.2.8 Finally, sections 2.5 and 2.6 of this memorandum demonstrate the importance of good practice in crystallising the balance agreed between stakeholders of when risk is reduced as low as is reasonably practicable (ALARP), and setting standards in terms of the control measures needed to reduce risk for a given hazard. There is already a considerable body of good food hygiene and good agricultural practice, which we expect the new Agency will wish to codify, develop and establish within its overall approach to risk assessment and risk management.

4. CONCLUSIONS

4.0.1 HSE believes that its TOR framwork (section 2.1) and the conceptual procedure for informing and reaching risk-based decisions in which the framework sits (section 2.3) is robust and universally applicable to any risk.

4.0.2 We also believe that the TOR approach provides a sound basis for risk-based decision making that is accountable, transparent, proportionate, consistent and targetted because it enables all the scientific, economic, social and political factors that contribute to risk assessment and risk management to be brought together.

4.0.3 In terms of risk communication a strength of the TOR framework is its inherent simplicity. Perhaps even more importantly, the concepts of unacceptable, tolerable and negligible risk that the framework embraces relect the intuitive, common-sense approach of society to risk, and translate into understandable action by the regulator in terms of banning, taking action to reduce risk ALARP and ensuring that standards are maintained, and doing nothing (or in practice putting resources elsewhere).

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[26] *BSE risk assessments*, Philip J Comer, Det Norske Veritas, a presentation at the DH-ACDP workshop, 21 January 1998.

4.0.4 HSE considers that it is for the new Food Standards Agency to develop, in consultation with its stakeholders, its own policies and risk-based criteria for food safety. Nevertheless we believe that an approach along the lines of HSE's TOR framework and procedure for informing and reaching risk-based decisions will meet the requirements set out in the Government's White Paper in terms of an approach to risk that:

- provides for an overall framework for risk analysis and decision making;
- enables coherence and consistency across the many hazards that fall within the new Agency's remit;
- enables proper consideration of both individual risk and the societal concerns that are often an important factor in food safety;
- embodies the principle that there is no such thing as zero risk;
- includes consideration of costs and benefits;
- accommodates standards stemming from international trade agreements;
- embraces and promotes good practice; and
- integrates risk communication into the risk analysis and decision making process.

Annex 1

COST BENEFIT ASSESSMENT

1. This Annex sets out further information on the application of cost benefit assessment (CBA) to proposals for health and safety at work legislation. As mentioned in paragraph 2.4.1, CBA is often an input into the decision making process.

Preparation of the CBA

2. CBAs are prepared by economists in HSE in very close consultation with policy advisers and other specialists (inspectors, engineers, occupational hygienists, statisticians, toxicologists and epidemiologists).

3. A wide range of internal and external sources of information may be used to prepare a CBA. Existing sources of information are used wherever possible. These are usually supplemented with small-scale and targeted enquiries to firms, trade associations and other stakeholders. The data collection exercise also includes a Small Firms Litmus Test designed to test for any particular implementation problems that may affect small firms, charities or voluntary bodies. Clearly, information provided by external sources has to be critically assessed, to ensure it does not reflect any misunderstanding of the proposal's intentions or practical effect.

4. In practice a CBA cannot be prepared without the adoption of certain technical conventions. Those used generally by government have been published in Treasury and Cabinet Office guidance[27].

What is a CBA?

5. The essential features of the CBA methodology are:

(a) transparency, with clear identification of the data sources and assumptions;

(b) comprehensiveness, covering as many of the unfavourable aspects (costs) and favourable aspects (benefits) of the proposal as practicable, analysing them from the viewpoint of society as a whole; and

(c) comparability, by presenting (where possible) the results on a common basis (usually money values).

6. CBA is always a comparative exercise, involving a choice between options. Sometimes, these choices will be explicit (eg choice of value for a Maximum Exposure Limit). More often, the choice will be implicit: between adopting the proposal and doing nothing. One of the explicit or implicit options must be specified as the "baseline", with the costs and benefits of other options measured as deviations from the baseline. The "do nothing" option is usually taken as the baseline.

7. CBA is also a forward-looking exercise. An end period for the analysis must be selected. The longer the time horizon, the more difficult it is to estimate costs and benefits with any precision. Yet too short a cut-off point may produce misleading results: it can take decades for the benefits of some health prevention activities (eg reduction of hearing loss) to yield measurable effects. HSE uses 10 years as a minimum time horizon, with longer periods where necessary.

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[27] See the Treasury "Green Book" ("Appraisal and Evaluation in Central Government, The Stationery Office, 1997), and the Cabinet Office guides "Checking the Cost of Regulation", HMSO, 1996 and "Regulation in the Balance", HMSO, 1996.

Assessing costs

8. The first step in any CBA is to draw up an assessment of the practical impact that new legislation will have on industry. This involves a comparison between what industry does now (and will do in the future), and what industry will have to do to comply with the new proposal. Where proposals are goal-setting, rather than prescriptive, this will require an assessment of which control measures are technically feasible and which of these are likely to prove reasonably practicable.

9. The cost to society of a measure to improve health and safety is the value of the resources required to implement it. Most resources can be put to an alternative use. So the cost of improving health and safety is the best alternative use to which these resources could have been put, ie the opportunity foregone, or the opportunity cost.

10. In a market economy, opportunity cost is usually the prevailing market price. So, for example, the cost to the duty holder of installing new and safer machinery is the price of the equipment plus the labour costs involved in installation and maintenance.

11. There are some exceptions to this general rule. One of these is that prices should be adjusted for taxes and subsidies: this is usually possible for indirect taxes (eg VAT), if not for direct taxes. The other main exception is to exclude transfer payments from the assessment. Transfer payments are those for which no goods or services are obtained in return, such as court compensation or social security payments. They change the distribution of income or wealth in society, but do not involve any additional consumption of resources. The benefit (to the recipient) is cancelled out by the cost (to whoever pays).

12. It may not always be possible to quantify and attach money values to all costs. For example, firms may not be able to identify the impact that a new duty will have on their cost base. Costs will then need to be expressed in qualitative terms. And even where cost estimates are available, these may be subject to considerable uncertainty, especially when results from a very small number of firms are being grossed up to the whole economy level.

Identifying and quantifying health and safety benefits

13. The assessment of health and safety benefits falls into two distinct steps: identification and quantification; and monetary valuation. Much of the identification and quantification work will have been carried out before the CBA is prepared, as part of a broader risk assessment.

14. The problems involved in identification (and subsequent quantification) are likely to vary according to the type of risk involved:

(a) Work accidents. The basic approach begins with a review of available accident statistics, the aim being to quantify the baseline risk by identifying the "population" of work accidents that the proposal aims to prevent. In practice, this is not always possible, because available statistics do not record sufficiently detailed information on the precise causes of an accident. Even where such data is collected, the likely effectiveness of the measure in preventing the specified type of accident needs to be quantified. This is essentially a matter of informed judgement. There is also, of course, the need to be cautious in extrapolating from historical data. Changing circumstances mean that historic data may no longer be an accurate indicator of the underlying problem.

(b) Work-related ill health. For ill health measures, the problems of quantification are generally more severe. It is often not possible to quantify even the baseline risk. There can be substantial gaps in current data on the incidence of occupational diseases, as well as on current levels of exposure to health hazards. Even where data of this kind is available, there remains the problem of quantifying risk (and reductions in risk) when dose-response functions are not available or are very poorly defined. Sound epidemiological evidence based on occupational health studies is usually the most reliable source of data, but may not be available. In its absence, other sources of information (eg results of experiments on animals) may be very imprecise indeed.

15. In many cases the problems are severe. While "best estimates" can sometimes be prepared with the help of judiciously selected assumptions, this is often not possible. The risk reduction benefits would then be described in purely qualitative terms.

Putting money values on health and safety benefits

16. Money values are used to provide a rough indicator of the trade-offs that society makes between the benefits of reducing risks and the costs they entail. There is ample evidence from everyday behaviour that individuals do indeed make trade-offs between their own (and their families') health and safety and other benefits. Money values aim to measure these implicit preferences in an explicit and consistent way.

17. The appropriate valuation procedure is to measure people's willingness to pay for a very small reduction in risk or, conversely, their willingness to accept a very small increase in risk. This can be done by looking at practical examples of where individuals make explicit trade-offs in a market situation between risk and other benefits (eg choice of jobs, car purchases). But good examples can be hard to find. An alternative

approach is to use market research techniques. The main advantage is that the information available to the subject is controlled by the researcher. The main disadvantage is that the questions are necessarily hypothetical. Both methods have their pros and cons and monetary valuation is not a precise science.

18. When evaluating the benefits of measures to reduce the risk of death, HSE uses a measure known as the value of a statistical life (VOSL). To illustrate the concept, suppose a study finds that, for a particular hazard, individuals are on average prepared to pay up to £10 in order to obtain a safety measure which reduces their chances of dying from that hazard by 1 in 100,000 and imagine this hazard affected 100,000 people. An average reduction of 1 in 100,000 in the individual probability of death implies that the expected number of fatalities across this population will be reduced by exactly one, ie one "statistical life" will be saved if the safety measure is implemented. This group of people are prepared to pay up to £1 million (= 100,000 × £10) to secure this reduction in risk. Hence the value they attach to preventing one "statistical" fatality, the VOSL, is £1 million.

19. HSC and Ministers have not endorsed any specific VOSL figure(s) for use in the appraisal of health and safety at work legislation. However, to provide a benchmark for discussion, HSE uses the VOSL developed by the Department of the Environment, Transport and the Regions (DETR) for the appraisal of road safety schemes. This figures currently stands at approximately £850,000 (June 1996 prices) and is uprated each year in line with the anticipated growth of output per head.

20. Similar procedures can be used for non-fatal injuries and ill health, although measurement can be more difficult for health conditions. The health consequences of, say hearing impairment, musculo-skeletal damage or lung diseases affect different dimensions of the victim's ability to work, to manage the household, or to participate in leisure and social activities.

21. Allowance may also need to to be made for public aversion to particular risks. There is extensive research evidence that people are more averse to some risks than to others. Factors that affect attitudes to different kinds of risk include: how far a risk is voluntarily accepted; how far it is perceived to be subject to individual control; its familiarity; whether it has catastrophic potential; and whether the nature of death is particularly dreaded[28]. In practice, HSE makes one adjustment for such factors in its CBAs: it doubles its "benchmark" VOSL to reflect a public aversion to dying from cancer. HSE, together with DETR, the Home Office and the Treasury, have commissioned empirical research into the values that the public place on different health and safety risks.

Assessing non-health and safety benefits

22. Proposals for new legislation may often produce benefits not directly related to reductions in the risk of death, injury or ill health:

(a) measures that reduce the risk of injury accidents will also tend to reduce the number of non-injury accidents, and the physical damage, lost output etc associated with these;

(b) other benefits may accrue if new health and safety measures improve productivity, through improved capital equipment, lower turnover, improved staff morale, or better management systems; and

(c) there may also be environmental benefits, such as less noise or pollution. In principle, these benefits can be valued in a similar way to reductions in health and safety risks. If environmental impacts are likely to be significant, HSE would seek advice from specialists in DETR.

Putting together the CBA

23. To put together the CBA, all costs and benefits valued in monetary terms need to be set out in a year-by-year profile. In addition, costs and benefits should be expressed in real (constant price) terms to remove the effect of future changes in the general price level.

25. Different options may well have very different cost-benefit profiles. Some may involve large costs in the near future, but a long-term stream of benefits. Others may involve no up-front costs, but significant costs on a recurring basis. Costs and benefits, whenever they occur, are therefore discounted to current values. This is usually done using the Treasury's recommended discount rate of six per cent, although alternative assumptions may need to be considered if costs or benefits accrue far into the future. Discounted costs and benefits can then be summed into present value costs and present value benefits.

25. Any forward-looking exercise is, by definition, hypothetical and relies on assumptions. Health and safety CBAs are no different. There are often considerable uncertainties, especially surrounding the required changes in industry practice, and the risks arising from the hazards addressed. These uncertainties should be explicitly recognised when presenting the results. For this reason, HSE often presents estimated costs/benefits in the form of a range. Sometimes, sensitivity analyses are also used to assess the impact on the results of changes in key assumptions.

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[28] See, for example, the 1992 Royal Society report *Risk: Analysis, Perception & Management.*

Annex 2

THE TOR FRAMEWORK: OCCUPATIONAL EXPOSURE TO SUBSTANCES

OCCUPATIONAL EXPOSURE LIMITS

1. Setting occupational exposure limits (OELs) illustrates the application of the TOR framework and the conceptual procedure for informing and reaching risk-based decisions in consultation with the stakeholders in an area where:

— risk assessment is complex;
— dose has to be used as a necessary surrogate for risk;
— account has to be taken of socio-economic factors;
— good practice plays an important role in setting limits; and
— legislation imposes good practice in the form of standards.

2. OELs[29] are important risk management tools that regulate the extent of personal occupational exposure (via inhalation) to substances hazardous to health. Under the framework in the Control of Substances Hazardous to Health Regulations (COSHH), there are two types of OEL—an occupational exposure standard (OES) and a maximum exposure limit (MEL)—which relate to two different toxicological profiles for hazardous substances. Both are expressed as airborne concentrations of a hazardous substance averaged over a period of time.

3. For a substance to which an OES applies, control is considered adequate under COSHH if the OES is not exceeded, or if it is exceeded the employer identifies the reasons and takes appropriate action to remedy the situation as soon as is reasonably practicable. In contrast, for a substance to which a MEL applies, control of exposure is only adequate if the exposure level is reduced so far as is reasonably practicable (in accordance with good practice), and in any case below the MEL. MELs have the force of law and are listed in a Schedule to COSHH.

4. An OES is set at a level at which, based on current scientific knowledge, it is judged the health of workers will not be damaged by exposure via inhalation to the substance day after day. MELs are normally set for substances which may cause health effects such as cancer or occupational asthma where it is not possible to identify reliably a threshold of exposure below which there would be no significant risk of these effects occurring. MELs are also set for substances for which "safe" thresholds may be identifiable, but control to these levels is not reasonably practicable.

PROCEDURE

5. OESs and MELs are set on the recommendations of the HSC's Advisory Committee on Toxic Substances (ACTS) and its Working Group on the Assessment of Toxic Chemicals (WATCH). The role of WATCH is to consider all the scientific evidence; the role of ACTS is more to take into account socio-economic factors in balancing risks to health against the costs and effort of reducing exposure. Both groups comprise appropriate representatives of the stakeholders, eg employers and employees, together with independent experts.

6. The process starts in WATCH which assesses all the available toxicological and exposure data collated by HSE. WATCH decides for each substance whether an OES can be established, and, if so, at what level it should be set. If, however, WATCH decides that a MEL is appropriate, consideration of the level passes to ACTS. ACTS makes recommendations on the basis of the level that can be achieved by application of good occupational hygiene practice, taking into account socio-economic factors, including costs and benefits. (In practice WATCH or ACTS may recommend separate levels for eight-hour time-weighted average and 15 minute reference periods.)

7. For a proposed OES, the recommendations from ACTS are subject to public consultation prior to approval and adoption by HSC. For a MEL, the recommendations from ACTS go to HSC and, if approved, proposals (including cost benefit analyses) are published for public consultation. After public consultation HSC may advise the Secretary of State that a new MEL should be added to COSHH. To allow informed comment, published consultation documents for both OESs and MELs include information summarising the toxic effects, typical exposure levels, measurement methods and the basis for the proposed exposure limits, including for MELs cost benefit assessments.

SETTING LIMITS

8. The approach adopted in the UK (and EU) is to decide whether or not the hazardous properties of the substance have a threshold, and, if so, to seek to derive from the available data an overall no observed adverse effect level (NOAEL). If a NOAEL can be established, the substance is considered for an OES—a level of

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[29] *Occupational Exposure Limits*, HSE guidance booklet EH40, and *Summary criteria for occupational exposure limits*, HSE guidance booklet EH64, both published annually.

exposure at which it is judged, with reasonable certainty, that there is no significant risk to health to workers. The NOAEL is translated into an OES using assessment or uncertainty factors to reflect, eg the quality of the data, the nature of the toxic effect and the need to extrapolate from animal data to effects on people. An OES is, however, only set if the level can be met by the application of good practice, and foreseeable excursions above this level are not associated with serious health effects.

9. Where it is not possible to identify a "no effect" level a MEL is set. This could arise either because the human health or toxological data is insufficient, particularly at low doses, to identify a no-effect level although one may in fact exist, or because the substance is considered to pose a risk at all levels of exposure. (A MEL may also be set for substances for which it may be possible to identify a no-effect level, but control to the corresponding exposure level is not reasonably practicable). A MEL is set at the level which is reasonably practicable to achieve for the work activity where control of exposure is most difficult.

OELs and the TOR Framework

10. To compare risks against the numerical criteria in TOR requires the risk to be expressed as the probability of a stated harm in a unit of time. The time dimension enters through the probability of occurrence per unit time for an event. This can be applied successfully for many processes or equipment "safety" risks (and exceptionally for certain health risks, eg ionising radiation, where sufficient dose response data exists to permit estimation of risk per unit time). The main focus of risk control is usually via the probability rather than the consequences that might ensue. These consequences, more often than not, are beyond control in any normal sense and, given the onset of the event, risk management has to move immediately to mitigation and amelioriation of the consequences.

11. Risks to health from chronic exposure to airborne contaminants are very different. Once in the location where the airborne contaminant occurs, exposure is inevitable. The health consequences relate to the concentration of exposure rather than probability of an occurrence per unit time. Thus, in the absence of control on exposure time (as is possible with ionising radiation), risk control must be exercised via the concentration of exposure. However, strict conventions must be observed as to how this is done as to take account of its inherent variability.

12. As mentioned in paragraph 2.2.7, an OEL should in principle be set using data on all the effects on health produced by the substance at different levels of occupational exposure per unit time. In practice, however, absence of data and lack of a clear understanding of the biological processes involved means it can be very difficult to relate occupational exposure over time to a probability of specific harm, particularly for chronic effects, and it is certainly not possible for emergent health risks. With emergent risks, if the resulting health effect is common in the general population (eg lung cancer), the study of implausibly large cohorts is needed to identify an increase in numbers of cases which can be reliably attributed to work-related causes. (An exceptional example of where the relationship between the risk of death from lung cancer and occupational exposure has been estimated is chrysotile asbestos.) Additionally, where there is a long latency period between exposure and development of the disease, meaningful data on the extent of exposure is very difficult to obtain.

13. For genotoxic carcinogens, one option for setting occupational exposure limits would be to estimate a negligible risk level using models to extrapolate from the high doses seen in animal experiments to the much lower doses relevant to the workplace. The drawback is that none of the available models have been validated and, depending on the one used, risk estimates can vary by several orders of magnitude[30]. The UK does not use this type of approach to predicting risk.

14. Given all these factors, judgements have to be applied to produce a consensual view as to acceptable and tolerable risks. The setting of OELs by HSE involves extensive consultation, as explained in paragraphs 5–7 above. Nevertheless, the TOR framework provides a coherent and compatible approach for linking the toxicological profiles, the limit setting process and the requirements of COSHH relating to OELs. This is illustrated in Figures 2 and 3, and can be summarised as follows:

(a) OESs are set at a level at which there is judged to be no significant risk to health, and so are close to or even within the broadly acceptable region of the TOR framework. These levels derive from the NOAEL, as explained in paragraph 8, with appropriate margins of safety. The excursions permitted above the OES are in the ALARP region, consistent with the COSHH requirement on employers to restore exposure to the level of the OES as soon as is reasonably practicable; and

(b) MELs are, in effect, at the boundary between the unacceptable and the ALARP regions, since it is an offence under COSHH to exceed a MEL. Employers must aim to control exposure as far below the MEL as is reasonably practicable in accordance with good practice (Figure 3).

15. It should be noted, however, that OELs are set substance by substance, and they do not usually relate to the end points of death, so the levels at which OESs and MELs are set do not correspond with the numerical limits of risk in paragraphs 2.2.4 and 2.2.5. This does not detract from the value of the TOR framework.

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[30] *Guidelines for the evaluation of chemicals for carcinogenicity*, Department of Health's Committee on Carcinogenicity of Chemicals in Food, Consumer Products and the Environment (see Chapter 7–risk assessment).

Extensive consultation with the stakeholders enables the tolerability of the proposed controls to be judged against the available evidence rather than against pre-set limits.

Figure 2

Application of OELs to the TOR framework - Occupational Exposure Standard (OES)

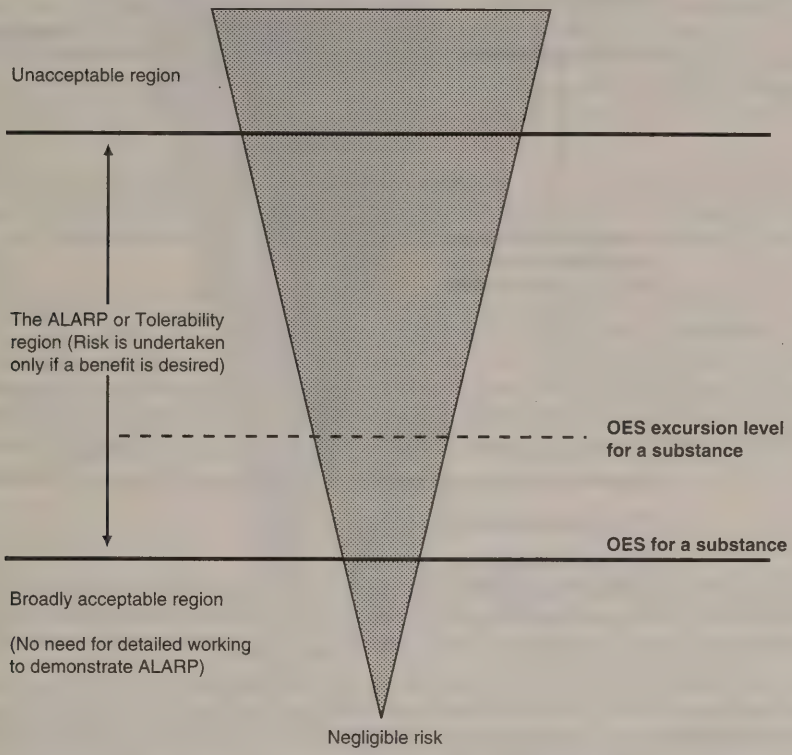
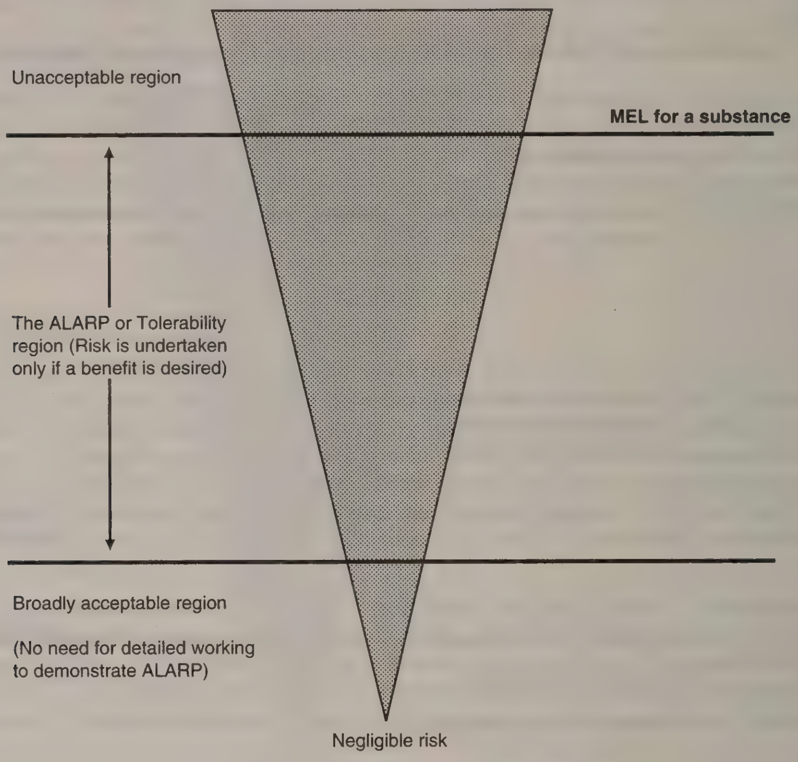

Unacceptable region
The ALARP or Tolerability region (Risk is undertaken only if a benefit is desired)
OES excursion level for a substance
OES for a substance
Broadly acceptable region
(No need for detailed working to demonstrate ALARP)
Negligible risk

Figure 3

Application of OELs to the TOR framework - Maximum Exposure Limit (MEL)


Unacceptable region
MEL for a substance
The ALARP or Tolerability region (Risk is undertaken only if a benefit is desired)
Broadly acceptable region
(No need for detailed working to demonstrate ALARP)
Negligible risk

Glossary of Acronyms

ACDP	Advisory Committee on Dangerous Pathogens
ACoP	Approved Code of Practice
ACTS	Advisory Committee on Toxic Substances
ALARP	As low as is reasonably practicable
BS	British Standard
CBA	Cost benefit analysis
CEN	Comité Européen de Normalisation
CENELEC	Comité Européen de Normalisation Electrotechnique
COSHH	Control of Substances Hazardous to Health Regulations
EU	European Union
FAO	Food and Agriculture Organisation of the United Nations
HSC	Health and Safety Commission
HSE	Health and Safety Executive
ILGRA	Inter-departmental Liaison Group on Risk Assessment
ISO	International Organisation for Standardisation
MEL	Maximum Exposure Level
NOAEL	No Observable Adverse Effect Level
OEL	Occupational Exposure Level
OES	Occupational Exposure Standard
TOR	Tolerability of risk
VOSL	Value of a Statistical Life
WATCH	Working group on the Assessment of Toxic Chemicals
WHO	World Health Organisation

6 March 1998

APPENDIX 84

Memorandum submitted by Mr David Smith (C129)

SUMMARY

HACCP is central to EU's approach to food safety. The World Health Organisation's view is that successful implementation of HACCP in food processing and manufacturing requires the full commitment and involvement of the work force. Further that training industry personnel in HACCP principles and applications, and increasing awareness of consumers are essential elements for the effective implementation of HACCP. What action is required at a European level? This position is set out in the attached paper on European Food Policy.

Structure of this paper is as follows. The introduction provides some of the background to my long standing professional issue in these matters. Secondly, policy questions put to the European Commission in July 1997. Thirdly, some observations are made upon certain aspects of current interest in relation to UK food hygiene training.

Two conclusions are drawn. Firstly, that HACCP is central to EU's approach to food safety, and that it is a critical issue that the Committee should pursue, at EU and UK levels until satisfactory answers are provided to simple straight forward questions. Secondly, that the remit of the Food Standards Agency should explicitly include the question of human resources and vocational education and training as they are central to our concerns about improving food hygiene and food safety. The funding of food hygiene courses should be reviewed in a considered manner, rather than in an arbitary fashion designed to switch training costs to employers.

INTRODUCTION

I agree with a recent statement by Mr Mattei in the French Assembly that "people involved are less to blame than are the contradictions in the system itself which does not make full allowance for the effects of the Single European Market on public health". Education and training are vital aspects. What is to be done?

In 1992 food worker and consumer organisations prepared a number of small, yet important food hygiene training amendments to regulate industry training, in the context of HACCPS. This was a strategic measure given the lag between EU food law regulation, and a rapidly expanding dynamic global trade in foodstuffs.

Briefings and amendments were researched, drawing upon international experience, with bursary support fromthe UK Trades Union Congress, and the National Association of Teachers in Further and Higher Education (NATFHE).

This was a prime example of European workers, cosumers, and educators co-operating to increase confidence in the food chain, with measures to address inadequate training, and supervision of 20 million European food workers.

The European Parliament accepted these amendments, but they were rejected in 1992 by the UK Presidency and the Commission. The European Commission informally promised a study of food hygiene training in Member States five years ago, but this has yet to occur. This can be made available if required.

Perhaps as a consequence of not undertaking such a study, five years later, the current wording of draft Article 6 (5) in Commission Working Document (Proposed General Food Directive. VI/8765/96 rev 2) is so ambiguous as to raise serious questions about its capacity to ensure that its stated objectives are achieved.

Poor regulation does not reflect President Santer's belief that public health should now be put to the fore, or recent statements by the Agricultural Commissioner. An alternative draft to 6/5 can be made available if requested.

Since this Commission Working Document draws extensively from the Food Hygiene Directive, it seems reasonable for the Commission to consider incorporating into its General Food Directive some of the European Parliaments amendments rejected in 1992 (see *Annex 1, from BEUC* [not printed]).

Difficulties in *sensibly regulating training* requires flexibility and full co-operation between regulatory, industry, worker, consumer, and educational interests. The responsible authorities will play a vital part in facilitating this process. Wherever possible social dialogue should apply.

In correspondence with the Commission I suggested that they would have their own experts able to provide clear guidance on manager, supervisor, and worker food safety knowledge (competencies) to underpin a process of Europeanising training. Indeed I offered to assist if required.

At a policy level I argued that to sustain change, and monitor its effect, opportunities should be provided for the social partners, and or the authorities, to encourage and maintain a continuous dialogue, in terms of:

- training standards for workers, supervisors, and managers, and generally quality control mechanisms;
- relationships between new and rapidly changing technology, in response to increased competition, and its implications for work organisation;

- strategies, and tactical use of standards relevant to food safety, occupational health and safety, and environmental protection;
- analysis and control techniques based upon an examination of work flows and risk/hazard assessment, and its implications for consumers; and
- accessing information, and encouraging participation in decision making.

Section Two

Policy Questions to the Commission

It is in this context that the following policy questions were put to DG VI and XXIV in the Summer of 1997. They are as follows:

(1) Would the Commission agree that:

- (a) the broader strategic issues of training are a key aspect of public health policy, given the critical lag between general food regulation, and a rapidly expanding dynamic trade in foodstuffs?
- (b) from a public health perspective the absence of adequate EU training standards obstructs the completion of inter state trade in foodstuffs?
- (c) an EU standard of training is a practical means of ensuring fair and safe food trade, given the increasing emphasis placed upon HACCP globally?
- (d) that subsidiarity cannot properly be applied to European standards of training and certification for those responsible for inspecting products of animal origin, whether they be official food inspectors, or those responsible for the principles and application of internal company HACCP systems, since these are crucial to the operation of an effective single market?

(2) Although the Commission assumes the benefits of a non prescriptive approach to training, has consideration been given to the prescriptive position taken by the World Health Organisation? In what sense has the WHO been taken into account in the EU's policy approach?

(3) If there is widespread agreement that HACCP is central to food safety why does the USA, the originator of HACCP, have a prescriptive approach to certain aspects of training, in its application of HACCP, whilst the EU does not?

(4) In terms of HACCP principles and applications, what significance is given by the European Commission to the full commitment of the work force as an essential element for effective industry implementation of HACCP?

(5) Apart from its ambiguity, does the European Commission agree that the current wording of draft Article 6(5) in Commission Working Document (Proposed General Food Directive. VI/8765/96 rev 2) is insufficiently supportive of any public health ambition to make industry HACCP principles and applications effective? In any event what evidence exists that industry HACCP systems are in place.

(6) What consideration has been given to effective industry HACCP principles and applications in the context of Community enlargement?

(7) Would the Commission welcome a comparative study of how national differences in food hygiene training and certification, with a view to achieving European standards of training and certification ???? official food inspectors, and those responsible for internal company HACCP systems?

(8) Apart from effective official control systems, would the Commission agree that the main guardian of consumer confidence in the food chain is often workers within particular industries who are aware of problems of food safety and food hygiene; and that there is often an interrelationship with this and occupational health and safety in the work place?

(9) Would the Commission agree that:

- (a) an increasing number of food companies are inserting "confidentiality clauses" in workers contracts which forbid them from speaking to people outside the company on matters of concern to them?
- (b) such contracts, when they relate to health and safety, food hygiene and food safety should be illegal; and that workers faced with this situation should receive special legal protection against dismissal, or any other form of disciplinary action or intimidation?
- (c) the importance of establishing hotlines, so that practices which are detrimental to food safety and food hygiene can be easily reported by workers?

The Commissions Response

This has been polite, but these questions have not been answered.

The UK Governments Response

Mr Rooker in his letter of 4 June accepts that training is a European issue. The unfortunate fact is that the Agriculture Commissioner did not agree this when I questioned him on this over a video link at a TGWU Food Safety conference held in Early September 1997.

I am still awaiting a reply to my letter of 16 July 1997 to Mr Rooker raising broadly similar, but fewer questions than those posed to the European Commission above. Perhaps the Committee could clarify some of the issues raised by my submission.

Section Three

UK food hygiene training

Certification Data

Observations are made upon certain aspects of current interest in relation to UK food hygiene training. Firstly, I attempted to obtain evidence for the Committee's inquiry into the level of food hygiene training, over the past ten years. The main purpose being to ascertain the effect of a switch of government policy in 1992, under the guise of EU Food Hygiene legislation.

Surprisingly, only one of the three main food hygiene examining bodies was able to provide data immediately. Of the remaining two, one advised that it appeared unlikely that they could obtain the data given the large number of centres involved. This will need to be checked with the manager responsible when she returns to her office.

The third organisation could only provide data for four of the past ten years. At this point I am therefore unable to draw any firm conclusions of the effect of a policy to mandate basic food hygiene training. This raises very simple questions about our ability to monitor the effects of public expenditure on food safety. No doubt the committee can draw its own conclusions.

I have just had sight of a draft witness proof of evidence from JHIC. The response at 736 for example, puts the best possible gloss on a miserable record in this sector. Much training is not certified. The basic question is whether training investment is properly targeted at the supervisory and managerial levels. This is clearly not the case based on actual evidence I have from two of the three main examining bodies. You will see the ratio between different types of training in the enclose bars charts that analyse data from perhaps the smallest certificating body.

The response at 745 does not reveal the open hostility of BHA to mandating food hygiene training in fact they played a major part in undermining the previous governments plans to mandate at a basic level in 1992. Unfortunately this deregulatory position is now embedded in EU legislation (93/43/EEC). This enables the Commission to argue subsidiarity, whereas the Minister is aware that this will require action at a European level.

Several other points need to be made on the JHIC:

> JHIC is an amalgam of trade and professional bodies. I can see a clear distinction between the position that ought to be taken by a trade association, and a professional/educational organisation.
>
> The JHIC written memorandum at page three, penultimate paragraph refers to the position supported. This position is minimal, and less than that previously advocated by Ministers after a food safety scare in 1988.
>
> Much greater training expenditure/investment is required by the industry. This should focus upon creating an "in house" capacity of firms to train all workers, supervisors, and managers, in a way that is externally certified, rather than the weak NVQ arrangements that I refer to elsewhere in this evidence.
>
> I agree entirely with Mr Wadey at paragraph 745, and Mr Logie at 749. As regards the latter this should not substitute for full industry participation in ensuring that adequate systems are installed, and that this is supported by industry training.
>
> Comments made concerning advanced GNVQs—hospitality and catering are untrue in the sense that the numbers involved are small. The main thrust of college training is in the delivery of NVQs. I refer to NVQs at the end of this paper.

In general terms, there is some consensus that the threat of mandation increased basic training substantially, and that this declined when the threat was withdrawn. The proportions of certified training are weighted substantially towards basic, as opposed to intermediate or advanced certification. The significance of the latter is that they are required to cascade "in house" training. This "in house" training capacity is a key systems factor over looked by the previous administration.

In contrast to the US FDA's Food Protection Programme, the European Commission also focused upon worker training. Whereas the real problem is in achieving a food manager training focus, as the key to effective implementation of food hygiene standards within a company. This is obviously the case when one considers my previous comments on the implementation of HACCPS. This position on training within HACCPS is supported by WHO (1993).

Further Education Funding Council

I am aware that the Further Education Council are still considering the position of Schedule Two funded food hygiene training courses. That is basic and intermediate training courses, requiring respectively six and eighteen hours of tuition.

Although basic and intermediate certification are stepping stones in terms of life long learning, for full and part time employees, the key objective is to ensure that firms have the capacity to deliver such training "in house". This requires intermediate or advanced certification according to the nature of the food operation. Of more importance is the ability to motivate trainees and deliver effective training.

Courses delivered in Further Education Colleges are an integral part of student training, and a significant source of funding, for precariously funded craft provision of 14 hours teaching per week. The delivery of basic and intermediate training is roughly equivalent to one hours teaching for 24 weeks. The loss of this to college funding would be considerable.

The withdrawal of Schedule Two funding for full and part time college based students, or the reduction of the income derived from this form of training would be a serious error of judgement, since seriously underfunded colleges would be unable to meet these costs, and students would therefore be denied essential training.

If food standards are important it would send an entirely wrong message. For further detail on the crisis in college catering programmes, based on recent survey data, you should read evidence submitted to the Education and Employment Select Committee, which can be found at Appendix 24 of a report to be shortly published.

National Vocational Qualifications

One further aspect of public interest is relevant when considering public funding of externally examined food hygiene certification. Currently National Vocational Qualifications are the major method of assessing food hygiene competences (see Appendix 24). This is achieved by embedding them within industry occupational standards.

This is an employer driven assessment system, without external examinations to secure quality assurance arrangements. This is a rather unfortunate method of assessment that could downgrade the importance of food hygiene, and other legal requirements. This requires further investigation. Perhaps the Committee could let me know what further evidence is required.

Food Standards Agency

Desipte the fact that the new Food Standards Agency white paper ignores the issue of human resource management, and briefly mentions training in the context of EHO's, it is concluded industry training should be firmly within the remit of the new Food Standards Agency, and that FSA should thoroughly review the human factors considered in this evidence, and vocational education and training issues. The case for this is clearly set out in the attached paper on European Food Policy.

March 1998

APPENDIX 85

Supplementary Memorandum submitted by the Institute of Horticulture (C130)

Thank you for your letter of 16 January asking if the Institute of Horticulture would wish to add to our written evidence submitted to your committee on "Food Safety in Agriculture". I apologise for the delay in responding to your request but we have only recently obtained a copy of the relevant White Paper and have not been able to consult fully with colleagues on its contents. However the consensus of opinion so far gathered is:

1. There is a need for an independent, impartial and authoritative official body which can give balanced information and advice and take appropriate action on food safety matters. The Food Safety Agency would appear to meet these requirements as far as can be ascertained.
2. Representation on the Agency must be balanced and the industry consulted and informed of any developments or action likely to affect them. Emotional and misguided food scares such as that with Alar on apples must not be allowed to occur.

3. Funding for the Agency especially with respect to charges for registration or licensing fees needs to be carefully considered especially with regard to growers and packers of horticultural product supplying supermarkets. These producers have already invested heavily in meeting and often exceeding any legally required food safety standards.
4. Funding for research into matters affecting food safety and consumer health is seen as a Governmental responsibility. There are several issues affecting horticultural crop production which need research.
5. Information and advice to consumers on food safety and nutrition would also be looked upon as a Government responsibility as would education, especially in schools, on these matters.

The Institute of Horticulture would wish to be kept informed of developments in this and other policy matters and are willing to consult with our members to provide our views on food safety as it affects our industry and profession.

9 March 1998

APPENDIX 86

Supplementary Memorandum submitted by the British Association of Feed Supplement and Additive Manufacturers (C132)

THE FOOD STANDARDS AGENCY: A FORCE OF CHANGE

The Association welcomes the opportunity to comment upon the White Paper and apologises for the late reply.

It is perhaps helpful to reiterate the statement in comments on "An Interim Proposal" by Professor P James, ie "BAFSAM members produce or supply nutrient and non-nutrient feed additives to manufacturers who mix animal feeds, including those situated on farms". The industry is a highly regulated and carefully controlled sector by European and UK legislation and as such welcomes the prospect of an Agency.

Comments on the White Paper really only emphasise two previous views on the James Report and one new one. (Numbering follows that of the White Paper).

> 3.22 Although Education Departments will receive advice, there does not appear to be a specific thrust towards educating the young through (an old fashioned descriptive term) Domestic Science in schools.
>
> In this context the Association repeats its assertion that a member of the Commission should be expert in the handling and cooking of food in the home (6.7).
>
> 4.18 Membership of Advisory Committee on Animal Feedingstuffs would be seriously lacking expertise without an Animal Nutritionist.

17 March 1998

APPENDIX 87

Supplementary Memorandum submitted by the Centre for Applied Microbiology and Research (C133)

WHITE PAPER: FOOD STANDARDS AGENCY

Thank you for your invitation to respond to the White Paper "The Food Standards Agency: A Force for Change" and for the opportunity to submit supplementary evidence in support of our memorandum of 29 October 1997. We endorse and welcome the scope of the proposed Agency and operational detail outlined in the White Paper.

We particularly welcome the intention of the Agency to control the spread of microbial pathogens in the food chain through a comprehensive approach to agricultural production methods, processing, storage and food preparation ("farm to fork"). The institution of a Food Standards Agency with such a broad remit should indeed help reduce the burden of foodborne illness in the UK and enhance public confidence in the food industry.

However, we would like to take this opportunity to restate our recommendation that the Agency recognises the importance of, and considers introducing appropriate control measures to limit transmission of pathogens from the environment, for example from agricultural and waste disposal practices. Farm and human waste disposal by land-fill and spreading on agricultural land are significant mechanisms by which crops, grazing land and groundwater become contaminated; pathogens can persist for extended periods in such contaminated environments and can also perpetuate and amplify infections in farm animals. We are concerned that these activities will fall between the statutory remits of the Environmental Agency and the proposed Food Standards Agency. We note, for example, that environmental control is not included in the main functions for the Agency (table 1, page 9). We suggest that due consideration be given to these issues.

We hope these comments will be useful to the Committee's deliberations on the White Paper.

12 March 1998

APPENDIX 88

Supplementary Memorandum submitted by the Soil Association (C136)

FARM ANTIBIOTICS AND FOOD SAFETY

SUMMARY

With the increasing incidence of food poisoning in recent years attention has focused on abattoir and kitchen hygiene, the compulsory slaughter of infected poultry flocks and attempts to eliminate sources of infection on the farm. However little attention has been given to management practices which may predispose animals to infection and facilitate spread within a herd or flock once it has been introduced.

In addition to encouraging the development of antibiotic resistance, the routine use of certain antibiotics in intensive livestock production can increase the incidence of pathogenic organisms such as salmonella, with obvious implications for food safety.

Therapeutic antibiotics are effective against a range of pathogenic bacteria, including salmonella and *Ecoli*, and essential for the treatment of infectious disease. However, their prolonged or extensive use, especially at sub-therapeutic levels can encourage the development of resistant strains. As a result their use does not completely eliminate bacterial diseases such as salmonella and under certain conditions can make the long term problem worse.

Growth promoting antibiotics are not generally effective against pathogenic enteric bacteria, like salmonella. However, they can increase the level, rate of spread and duration of disease in poultry since their action is to kill off bacteria with which the enteric bacteria would normally be in competition. The possibility must exist that they have a similar effect in pigs, cattle and sheep, but this has not been studied.

While there has been little UK research in this area for 20 years, scientific evidence nevertheless exists from UK government-funded experiments in the 1970s suggesting that several widely used antibiotic growth promoters significantly increase the incidence of salmonella in poultry. This work has been challenged by the pharmaceutical company which developed one of these products, but our analysis is that the counter evidence put forward by the company falls far short of establishing that these products do not have a negative impact on food safety.

Sweden banned all growth promoting antibiotics in 1986 principally due to concern about salmonella and two other EU Member States, Finland and Denmark are already moving in the same direction.

This paper recognises that any further bans on growth promoting antibiotics will not be without technical and financial implications for livestock producers. However, it argues there is already sufficient evidence to make it necessary to apply the precautionary principle for the protection of public health and suspend several specific antibiotic growth promoters pending further research.

It is the Soil Association's view that antibiotics should not be used as growth promoters and should be confined to the treatment of disease in both humans and animals. Even here we believe that to safeguard their long term efficacy against serious life-threatening diseases a change in attitudes is required so that greater emphasis is placed on aspects of preventative medicine not involving drugs.

Intensive poultry producers have experienced technical problems as a result of the suspension of one growth promoter, avoparcin, last year and found it necessary to use increased quantities of therapeutic antibiotics in addition to alternative growth promoting antibiotics. This could increase the multi-drug resistance of food poisoning organisms. With the prospect of further bans to follow we feel that both MAFF and UK livestock producers should begin now to consider how production methods can be modified to reduce dependence on antibiotics wherever possible. Some experience could be gained by studying the strategies already adopted in other countries.

This paper also presents evidence on the inadequacies of regulatory mechanisms for antibiotics in agriculture and the way in which the current situation has been allowed to develop.

THE SOIL ASSOCIATION

The Soil Association is a registered charity established in 1946 to study and compare the long term impact of different farming methods. Since 1974 it has set and policed standards for organic food production[1] to provide practical encouragement for the development of alternative farming methods. Its aim is to promote awareness of the relationships between the way food is produced, human health and the environment. Increasingly it is seen as a consumer organisation, representing the interests of those who choose organic food.

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[1] For the Soil Association standards on antibiotic use in livestock production see Annex I.

INTRODUCTION

1. The Agricultural Select Committee will be aware that there are a number of ways in which the use of antibiotics in livestock production can affect food safety:

- the committee has received evidence, some of it conflicting[2], on the extent to which antibiotics used in livestock production may be responsible for the development of drug-resistant disease in the human population; and
- the potential problem of antibiotic residues in food is widely understood and under constant scrutiny by the Veterinary Medicines Directorate (VMD).

2. However, there is an additional food safety issue associated with the use of antibiotics in livestock production about which the select committee may so far have received little evidence.

3. This is the extent to which the routine inclusion of certain antibiotics in livestock feed may be responsible, or partly responsible, for increasing the incidence of pathogenic bacteria in farm animals. As such the question arises whether their use in this way may also be a factor in the continuing increase in the incidence of food poisoning.

4. Only a relatively small amount of scientific evidence is available on this subject, in part due to the fact that (as far as we have been able to establish) no research in this area has been published by British researchers since 1979, although we understand that one paper is due before long.

5. As far as we are aware, also, this issue has not previously been the subject of any parliamentary or government advisory committee enquiry. There is, however, evidence that the Joint Sub-Committee on Antimicrobial Substances (JCAMS) was anxious to review this aspect shortly before it was abruptly abolished by government in 1981[3].

6. It is perhaps of note that some other EU countries have taken more interest in this issue, commissioned limited research, banned products widely used in the UK and as a result may have helped to reduce their incidence of food poisoning in this way (Anon 1995b).

7. Since it appears to us that there have been failings in the licensing and regulatory mechanisms which have failed to take account of, or action on, this issue in relation to a number of widely used products, we also present evidence in this paper which throws some light on how the current situation has been allowed to develop.

USE OF ANTIBIOTICS IN LIVESTOCK PRODUCTION

8. Antibiotics are used in livestock production in three basic ways:

- therapeutic or Prescription Only Medicines (POM) antibiotics are used to treat specific infections, under veterinary supervision;
- therapeutic antibiotics are administered at sub-therapeutic levels to prevent disease, again under veterinary supervision; and
- growth promoting or Pharmacy and Merchants' List (PML) antibiotics are added to livestock feed without veterinary prescription to enhance performance and the efficiency of feed conversion.

9. However, these seemingly clear categories are less distinct than it may appear. Most therapeutic antibiotics also have growth promoting effects, in many cases greater than permitted growth promoting antibiotics. Several growth promoting antibiotics are closely related to therapeutic antibiotics used in human medicine and also have therapeutic properties.

10. It is widely known that the use of medicated feed is an integral part of modern pig and broiler poultry production. According to UKASTA virtually all pigs and broiler poultry in the UK receive POM antibiotics in their feed during the early stages of life and either PML antibiotics[4], or POM antibiotics, in-feed for the rest of their lives (Raine, 1997).

11. However, antibiotics are also included in the milk or feed of about half of all baby calves, a third of all adult cattle and most intensively reared sheep. Other antibiotics are administered by injection, infusion and orally to almost all dairy cows and many young animals in an attempt to prevent disease. The routine use of long acting antibiotics to control mastitis in dairy cows is well known, but we have been told by a veterinary surgeon that almost all lambs now receive antibiotics both orally and by injection within the first few days of life, not because they are ill, but as a management aid which allows individual shepherds to care

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[2] For example the committee received written evidence from Professor I D Aitken, chairman of the Veterinary Products Committee (Aitken 1997) that "There is no scientific evidence on whether the development of resistance to antibiotics in animals is important to man". The committee also received evidence from the Meat and Livestock Commission which stated that "Evidence of bacterial resistance to a range of antibiotics has been described in scientific publications for some time, but concerns are increasing as more and more cases come forward" (Maclean, 1998).

[3] See Regulation and Deregulation page 678.

[4] Pharmacy and Merchants' List (PML) antibiotics are available without veterinary prescription. The PML category is soon to disappear under harmonisation of EU veterinary medicines legislation. In future PML antibiotics will be known as Zootechnical Feed Additives and will be subject to controls similar to those for PML antibiotics.

for larger numbers of sheep. The only significant exceptions to this trend can be found with the relatively small number of organically managed farm animals.

12. It is not easy to quantify the exact nature of current UK trends in antibiotic usage, since despite earlier recommendations that it should do so (Swann Report 1969), government does not gather statistics on antibiotic use. It is known that the total quantity of antibiotics used in livestock feed fell sharply in the early 1970s after the implementation of recommendations from the Swann Committee (1969), but started to rise again from 1974 and by 1977 was equal to the pre-Swann levels (Linton 1982).

13. It is also known that government quietly went back on its initial acceptance of the Swann Committee recommendation that growth promoting antibiotics should not be given to calves over three months of age or any adult animals, and permitted the use of avoparcin in beef and dairy rations from 1976 (Browning 1997).

14. While no accurate figures exist for the period since then it is generally accepted that further significant increases have occurred, in tandem with an overall increase in livestock numbers and intensification of production methods.

IN-FEED ANTIBIOTICS AND FOOD POISONING BACTERIA

15. Food poisoning is caused by a range of microorganisms including bacteria, viruses and parasites. However, the most common cause is the contamination of food with bacteria of farm animal origin. Of the many different types of pathogenic bacteria which can give rise to food poisoning some are species specific, but many more can infect and be transferred between man and a range of farm, domestic and wild animals; many are also found in the environment.

16. Under certain circumstances, some pathogenic bacteria can change and adapt so that they come to infect previously unaffected species. In some cases this causes ill health, in others the bacteria appear to live harmlessly in the host species which then becomes a new reservoir of potential infection for humans and other animals. There are a number of examples of these two aspects. Salmonella typhimurium DT104, for example, has become a major cause of food poisoning during the last decade, yet many cases can be traced back to farm animals, especially adult cattle, showing no obvious symptoms of the infection. Thirty years ago no pathogenic strains of salmonella had been identified from sheep in the UK, today salmonella is relatively common in British sheep flocks[5].

17. Since antibiotics kill bacteria it might seem reasonable to assume that their use in livestock production will decrease, not increase the level of food poisoning organisms in farm animals. In the UK such an assumption appears to have underlain the regulatory approach to farm antibiotics, despite evidence showing that several widely used antibiotics predispose poultry to higher levels of infection.

18. Efforts to control salmonella, for example, have concentrated on abattoir and kitchen hygiene, the compulsory slaughter of infected poultry flocks and attempts to eliminate sources of infection on the farm, but have significantly failed to address the extent to which the use of antibiotics may be a factor in the continuing rise in salmonella and other pathogenic bacterial infection.

19. One possible explanation for this is that in weighing industry and independent evidence equally regulators may have felt able to turn a blind eye towards potential problems in the 1970s when the whole culture of agriculture was geared towards maximum production and cheap food. However there can be no excuse for such an approach to veterinary medicines regulation continuing at the present time.

20. In addition to the increasing incidence of bacterial disease, the last 20 years has also seen the emergence of a number of new or previously unidentified bacterial strains, which have developed to become major pathogens. The most significant examples of this are *Salmonella typhimurium* DT104 and *Ecoli* O157, neither of which were known before the early 1980s. While it is possible to piece together the theoretical evidence to explain how the widespread and routine use of antibiotics at sub-therapeutic doses could have provided the selection pressure to allow the development of an initially insignificant mutant strain (Abraham 1949, Watanable 1963, Swann Committee 1969, Linton 1977, Levy 1997) there has been a marked absence of practical research into this issue.

SALMONELLA

21. Despite various attempts to control salmonella, we are experiencing an "epidemic . . . both in man and farm animals" (Evans and Davies 1996), with some 40,000 cases reported last year and 200 deaths (Gilbert 1998). Despite this no UK research for 20 years has considered the possible link between antibiotic use and salmonella incidence.

22. Jarloem et al (1975) researching for the American Cyanamid Company acknowledged in 1975 that:

> *"Little is known concerning the influence of antibiotic feeding on the salmonella reservoir in chickens".*

23. What was true for chickens was also true for all other species, and, we would suggest, is still largely true today.

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[5] See Annex III.

24. In view of the direct significance of this issue for human health one might have expected that a series of definitive studies would have been undertaken to establish which, if any, feed antibiotics can safely be used without increasing salmonella levels, at what dosage rates and under what circumstances. As far as we have been able to establish this has not been done. Whether this was due to the general move to near market research or a casualty of the BSE crisis we do not know. What we can say, however, is that basic scientific study which had been developing in this area in the UK for more than 10 years came to a sudden halt in 1979 and has not in any comprehensive way been taken up again since.

25. In addition to the UK studies a number of experiments were carried out in the USA during the 1960s and 1970s, mostly by pharmaceutical companies. Many of these studies are, however, of only limited value in the UK, since the USA and the UK have had markedly different legislation on antibiotics since the early 1970s and as a result have used different antibiotics for growth promotion. Where the same antibiotics have been used this has generally been at different purposes and at different dosage rates and durations.

26. The most convincing evidence of a linkage between antibiotics and the increase in food poisoning bacteria relates to a number of growth promoting antibiotics first licensed in the UK in the 1950s, 1960s and 1970s and added to Annex 1 of the EU Feed Additives Directive 70/524 in the late 1970s. The use of one of these, avoparcin, has been suspended throughout the EU since April last year due to separate concerns about drug resistance, however several others are still in widespread use.

27. While attention needs to be focused on the growth promoting antibiotics, even the evidence relating to therapeutic antibiotics suggests the need for further research and some caution.

28. While, in our view, the use of therapeutic antibiotics should never be witheld from the treatment of sick animals, there are broader strategic concerns which need to be considered relating to livestock management systems, the prevalence of disease, and the relative emphasis which is given to drug and to other methods of disease prevention and treatment.

Therapeutic Antibiotics

29. The trials carried out by Jarolem et al (1975) showed a significant decrease in salmonella in experimentally infected poultry being fed therapeutic doses of chloratetracycline. Similar observations were made by researchers in Britain, (Smith and Tucker 1975a), earlier in the same year, who had found that several therapeutic antibiotics including oxytetracycline, either did not alter, or reduced, the level of salmonella in experimentally-infected poultry. These results were further reinforced by the same Cyanamid team, Layton et al (1975) who carried out trials with calves and Gutzmann et al (1976) who studied the effect of chloratetracycline fed to pigs.

30. These seemingly reassuring studies were, however, at odds with earlier work where an increase in the salmonella carrier state[6] had been associated with antibiotic treatment in humans (Aserkoff and Bennett, 1969). A further complicating aspect had been observed as early as (1960) when Garside et al noted a significant increase in the salmonella carrier state in medicated poultry where antibiotic resistance had developed.

31. Whereas the American researchers had found little or no evidence of drug resistance developing, Smith and Tucker noted a considerable increase in drug-resistant salmonella in their experiments and found that with most of the therapeutic antibiotics they tested, reductions in salmonella excretion only occurred when high dosage rates were used throughout the entire life of the bird—a practice no longer permitted in the UK. Where lower rates of inclusion were used only neomycin and a mixture of the antibiotic trimethoprim and the sulphonamide sulphadiazine brought about a reduction in salmonella excretion.

32. In relation to *Ecoli*, Smith & Tucker (1975a) found that, "Although many of the antibiotics, particularly at the higher concentrations, brought about a profound reduction in the concentrations of faecial *Ecoli*, this was usually short-lived because of the emergence of populations of *Ecoli* that were antibiotic resistant."

33. In order to make some sense of these apparent contradictions it is necessary first to be clear that there are two separate issues here. The first is the extent to which antibiotic usage encourages the development of drug resistant bacterial strains, the second is the extent to which it either increases or decreases the overall level of infection and the length of time that poultry continue to carry salmonella infection and/or excrete it in their droppings.

34. For any given antibiotic some bacteria will be naturally sensitive and some naturally insensitive (or resistant). Most salmonella strains are naturally sensitive to a wide range of therapeutic antibiotics and several are still used as treatment against salmonella infection. However, as Smith & Tucker pointed out the enterobacteria are not sensitive to the growth promoting antibiotics, but can nevertheless be affected by them since they radically alter the gut flora and the balance which may previously have existed between various species and strains. As Smith and Tucker also pointed out, treating farm animals with therapeutic antibiotics will usually reduce the number of sensitive bacteria, but increase the overall level of resistant ones.

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[6] The carrier state, as the name suggests is a condition in which animals no longer showing obvious symptoms of disease either continue to excrete infectious material or carry the infection in some form of dormant state which is capable of being passed to other animals at a later stage.

35. There are two main reasons for this. Even among those species or strains that are naturally sensitive, there can exist or develop a very small percentage of mutants, some of which may be resistant to the antibiotic being used. Under normal (unmedicated conditions) these variants will assume no great importance, however, when medicated feed is given, especially at low levels over a prolonged period, a selection pressure is created which favours the mutant strain, quite simply because vast numbers of its competitors, being sensitive to the antibiotic, are killed off. Since bacteria can multiply every 20 minutes, a small number of resistant variants can quickly replace the indigenous bacterial population. It has also been known since 1959 (Watanable 1963) that resistance can develop in bacteria without mutations, due to the transference of extra-chromozonal resistance factors such as R-plasmids which carry some genetic material.

36. Levy (1997) has explained how the length of time taken for sensitive strains to re-establish after treatment with antibiotics will depend on the total quantity of antibiotic used in a given environment and the length of time over which it is administered. As such dosage rates, treatment duration and the total number of treated animals in a particular environment are all factors which can influence the extent to which medication with antibiotics will increase antibiotic resistance and in relation to the therapeutic antibiotics resistance can be a factor in an overall increase in infection.

37. Another observation of Smith and Tucker may also be relevant. They noted that even where resistance developed, the use of the antibiotic was still valuable in reducing mortality in infected poultry. Quite why this should be so is not known for certain. However, the significance is that continuing antibiotic therapy, even in the face of mounting resistance, has commercial advantages for producers. We believe this is one reason why the intensive livestock industry has attempted to play down the importance of the development of drug resistance. As Smith and Tucker pointed out this is a mixed blessing since it means both that a higher proportion of infected chickens survive to continue excreting or carrying salmonella and also that a higher proportion of poultry will be contaminated with salmonella at slaughter.

38. While the use of some therapeutic antibiotics clearly can reduce salmonella infection, at least in the short term, it is significant that the trials in 1975–76 cited above, and a small number of others conducted in the USA at about the same time, all used therapeutic antibiotics at relatively high dosage rates for the full period over which the poultry were studied. In the UK the use of chloratetracyline, oxytetracycline and penicillin for growth promotion was prohibited in March 1971, due to concern about the development of antibiotic resistance, following recommendations from the Swann Committee in 1969. However, while the tetratcyclines were, and still are, used as pig and poultry feed additives under veterinary prescription, manufacturers now caution about the development of resistance (Anon. 1995) and treatment should, in theory at least, be only for relatively short periods of 5–7 days, and not for entire life of the animals as in the studies cited.

39. While research findings relating to therapeutic antibiotics are not clear cut, we believe there is sufficient evidence that problems may nevertheless exist and that further research should be commissioned as a matter of some priority. UK studies on salmonella have tended to investigate every possible aspect from farm cats to wild birds as a source of infection yet the influence of antibiotics has not been considered. One recent study from France, however, (Humbert et al 1997) gives added weight to the above arguments and also shows that attempts by the intensive poultry industry to eradicate salmonella using fluroquinolones (important drugs, until recently only licensed for human therapeutic purposes) have been unsuccessful. Although Smith and Tucker's work predates the use of fluroquinolones in livestock production, if one assumes that their general conclusions relating to therapeutic antibiotics are also likely to apply to the fluroquinolones these results could have been predicted since any attempt to eradicate salmonella is likely to make the long term situation worse since it will increase the speed with which resistance to them develops. This is significant since the wisdom of permitting the use of fluroquinolones for this sort of cavalier approach to poultry disease has been criticised and is believed to explain the recent emergence of fluroquinolone resistance in the human population (Threlfall et al 1997).

40. In conclusion it can be stated that while several therapeutic antibiotics have an initial significant effect in reducing salmonella infection in pigs and poultry, they do not do this under all circumstances and in practice may sometimes increase infection levels, especially in the longer term. Even where they reduce infection they tend to encourage the development of resistant strains which has three direct consequences:

- it forces veterinary surgeons to move to other therapeutic antibiotics for the continuing treatment of salmonella and other infections. With time resistance develops to these too and so yet more drugs are brought in;
- where resistance develops, attempts to control salmonella through the use of antibiotics will not be entirely successful; and
- the increased level of drug-resistant strains in farm animals means that a higher-proportion of food poisoning cases will be caused by drug resistant bacteria which can have life-threatening implications in a small proportion of food poisoning incidents.

GROWTH PROMOTING ANTIBIOTICS

Background

41. In 1949 two American researchers discovered that feeding antibiotics to farm animals at low (sub-therapeutic) levels could, under average farm circumstances, increase growth rate and feed conversion. In 1953, after three years of trials conducted by the Agricultural Research Council in the UK, Parliament amended the Penicillin Act 1947 and despite some dissenting voices, introduced the Therapeutic Substances (Prevention of Misuse) Bill which permitted antibiotics to be added to the rations of farm animals without prescription.

42. In the mid-1960s an epidemic of drug-resistant salmonella in calves led to a large number of food poisoning cases and some loss of life. As a result government eventually established a committee under the chairmanship of Professor (later Sir and then Lord) Swann to consider all aspects relating to the use of antibiotics in agriculture, but in particular the problem of transferable drug resistance, and to make recommendations.

43. A key recommendation of the committee: that penicillin and the tetracyclines should no longer be used for growth promotion due to the problem of antibiotic resistance was accepted by government although the extent to which this restriction was applied in practice has been questioned on a number of occasions (eg Linton 1977, Linton 1982).

44. While the Swann Committee did not consider the extent to which antibiotics might increase or decrease the incidence of food poisoning bacteria in farm animals it recognised the extent to which all antibiotics given routinely to farm animals, especially those at sub-therapeutic doses create a selective pressure which favours the emergence of drug-resistant bacteria, the potential for these to be transferred to man and the possiblility that the resistance factors could then also be transferred to other bacterial species within the human gut. As a result the committee recommended that we should move away from the routine use of antibiotics in livestock production. A recommendation which has not been followed in the UK.

45. However, despite setting out its concerns about the sub-therapeutic use of antibiotics the committee bowed to commercial pressure and accepted that there was, at that time, insufficient evidence to ban all antibiotics for growth promotion. It therefore recommended that if an antibiotic was not used for therapeutic purposes and would not compromise efficacy of any therapeutic antibiotics, but was also effective as a growth promoter, it could be incorporated into the feed of a young animal without veterinary prescription.

46. Before the publication of the Swann Report in 1969 the only antibiotic which fitted this description was zinc bacitracin. However, the Swann recommendations gave a clear signal to the pharmaceutical industry that it could nominate certain antibiotics for growth promotion (and therefore not market them for therapeutic purposes) and also develop new antibiotics specifically as growth promoters, if they complied with the criteria the committee had laid down.

47. The first such antibiotic to be licensed in the UK was spiramycin, a macrolide previously used for therapeutic purposes which shows some cross-resistance with erythromycin (Anon 1997d) and the second was avoparcin, a glycopeptide first licensed for use here in 1972 (Browning 1996) which came to be the most widely used growth promoting antibiotic in the UK. Despite a clear recommendation from the Swann Committee that tylosin should not be allowed for growth promotion, since it had important therapeutic properties which could be compromised, the Department of Health eventually caved in to intense lobbying from the pharmaceutical industry (MacKinnon 1981) and tylosin is the one antibiotic which has been permitted at both low level inclusion for growth promotion and at higher doses for therapeutic treatment under veterinary prescription.

48. When licensing new antibiotics today the Veterinary Medicines Directorate (VMD) and, where necessary, the Veterinary Products Committee (VPC) are now expected to consider evidence relating to salmonella excretion. However, almost all the growth promoting antibiotics currently in use were licensed before such a requirement was introduced.

Evidence

49. Industry studies on the influence of growth promoting antibiotics on salmonella have concluded that there is no problem. It is not clear, however, whether drug manufacturers are required to submit to regulators results from all trials they have carried out into a specific issue. For example, even where drug companies use independent researchers can we be sure they have not already carried out trials to establish study designs most likely to provide favourable results?

50. Judging by evidence we have seen it is clear that different results can be obtained from similar trials and that a great deal can depend on the precise design of an experiment. As such it is necessary to acknowledge arguments from Cyanamid (Angold 1981) suggesting that differences may also occur between experimental and field scale condition.

51. Some of the very few independent investigations into the effect of growth promoting antibiotics on salmonella (and to a limited extent *Ecoli*) were carried out by H Williams-Smith and J F Tucker, at the Houghton Poultry Research Institute near Huntingdon. In addition to their work on therapeutic antibiotics

they undertook out a series of experiments on artificially infected poultry between 1975 and 1979 fed on a range of growth promoting antibiotics. In the introduction to the first of these experiments they commented (Smith and Tucker 1975b):

> "Although these antibiotics are not active against the enterobacteria, they are active against many of the bacteria that inhabit the alimentary tract. It is possible, therefore, that their use as feed additives might disturb the ecological balance in the alimentary tract in favour of the enterobacteria, particularly the salmonellas."

52. Smith and Tucker found that groups of chickens fed diets containing virginiamycin, bacitracin, flavomycin, tylosin or nitovin "Either excreted similar amounts [of S tryphimurium], slightly greater amounts or much greater amounts", than the groups fed antibiotic-free diets.

53. In their second series of trials (Smith and Tucker 1977) they found that, "Avoparcin and lincomycin, like nitrovin and tylosyn, favoured colonisation of the alimentary tract by the S typhimurium organisms as shown by the fact that the chickens to which they were fed excreted these organisms . . . in higher concentrations and for longer periods of time than did chickens on non-medicated diets". They also found that, "Many of the chickens that were fed on diets [containing growth promoting antibiotics) . . . but not those on non-medicated diets, were still excreting S. typhimurium . . . when they were killed at 56 days of age".

54. While avoparcin had first been licensed as growth promoter for pigs and poultry in the UK in 1972 and for adult cattle including dairy cows in 1976, licensing procedures were tightened in the late 1970s when avoparcin and a number of other growth promoting antibiotics came under additional scrutiny before being added to Annex 1 of the EEC Feed Additives Directives 70/524.

55. Smith and Tucker's experiments had raised serious questions and Cyanamid, the company which first developed and marketed avoparcin had to fight a major rear guard action to get it added to Annex 1 and for a time Marks and Spencer stopped selling poultry fed on avoparcin (Fussell 1981, Mudd 1997). Cyanamid set up a series of carefully designed experiments under commercial conditions in both Europe and America using much lower levels of infection than Smith and Tucker. In Europe two experiments involved 186,000 broilers fed avoparcin, virginiamycin and a control, though apparently less than two per cent of the birds were actually sampled. In both cases Cyanamid found that both growth promoters "Did not have a detrimental effect on the incidence of salmonella". They also claimed that salmonella was not on the increase, but that since the Zoonoses Order 1975 it merely appeared to be rising, due to increased reporting and greater press coverage of food poisoning incidents. And that "The levels of salmonella and other food poisoning microorganisms found on foods rarely cause human problems unless hygiene abuse occurs—salmonella has been part of our diet for a long time and will no doubt continue so". However, Cyanamid concluded in slightly less confident tone, "From the observations made under practical conditions . . . it appears unlikely that any of the licenced growth promoters contribute in any way to salmonella problems in poultry" (Angold 1981).

56. It seems that the Veterinary Products Committee was happy to accept Cyanamid's results and ignore those of Smith and Tucker. As a result avoparcin and the other growth promoting antibiotics were added to Annex 1 in 1979. However, from the limited evidence we have seen it appears that an expert sub-committee of microbiologists set up to advise the VPC was very anxious to review Smith and Tucker's work in relation to avoparcin, but was prevented from doing so (see below under Deregulation and attached submission to the House of Lords).

57. Conscious of the possibility of weaknesses in their trials as identified by Cyanamid, Smith and Tucker carried out a third series of experiments (Smith and Tucker 1979) in which they extended the trials to include different poultry breeds and turkeys, a larger number of salmonella strains and different rates of infection. They found similar results under all variables and stated that in all cases that avoparcin "Strongly favoured the colonisation of the alimentary tract with salmonella organisms." They also found that much lower doses of salmonella would infect poultry fed diets containing avoparcin than non-medicated poultry and that, "Infection spread more rapidly and more extensively through the avoparcin-fed groups than the non-medicated groups".

58. Since Smith and Tucker's results are in direct contrast to those of Cyanamid they cannot be regarded as definitive. They nevertheless provide strong evidence of a serious possible side effect associated with several widely used growth promoting antibiotics which could account for much of the continuing rise in salmonella food poisoning. It is possible that differences would occur, as Cyanamid claimed between artificially infected and naturally infected birds. However, it seems very unlikely that Smith and Tucker's findings relating to the increased spreading of salmonella in poultry fed avoparcin would vary significantly between thier trials and full scale commercial conditions. If anything one would expect greater problems where larger numbers of birds are housed together. As a result we can only feel that further trials should have been undertaken at the manufacturer's expense, which were totally independent and that the results should have been published in the normal way in the literature after peer review but without any input from Cyanamid.

59. In the absence of further studies we can only note that Smith and Tucker's earlier studies, also raised serious questions about other growth promoting antibiotics particulary tylosin and virginiamycin, two products still widely used at the present time. We would suggest that the influence of growth promoting antibiotics in particular, should also be studied in relation to other significant pathogenic bacteria and that such studies should not just consider their effect on poultry but include pigs, dairy cows, calves, fattening cattle and sheep.

Recent developments

60. Since 1 April 1997 the use of avoparcin has been suspended throughout the EU on the basis of evidence that its use in livestock feed is a factor in the growing incidence of enteric resistance to the antibiotic Vanomycin, which is a drug of last resort in the treatment of a number of life-threatening infections.[7] The evidence relating to avoparcin and drug resistance will be reviewed next year, but we would ask the Agricultural Select Committee to draw to the attention of UK regulators the fact that before considering reinstating this antibiotic, as many in the intensive livestock and pharmaceitical industries are demanding, evidence should also be considered relating to its possible role in increasing the evidence and levels of salmonella infection in farm animals.

Other countries

61. While UK and EU veterinary medicines regulators took no action as a result of Smith and Tucker's studies, Sweden, not then part of the EU commissioned further work on avoparcin (Holmberg et al 1984) which found that under typical conditions in Sweden where avoparcin was used in combination with Monensin, another antibacterial agent also widely used in the UK, an even greater increase in salmonella infection was observed.

62. As a result of this study and the work carried out by Smith and Tucker, Sweden banned use of avoparcin in 1984. (Wierup 1997). It is important to note that this was not, as is widely believed, principally due at that time to concern about drug resistance, but due to its potential link with the incidence of food poisoning.

63. Swedish poultry producers initially switched to virginiamycin, one of two growth promoting antibiotics which British poultry producers are using since the avoparcin suspension, but after a more detailed reveiw of the literature Sweden banned all antibiotic growth promoting antibiotics in 1986. Several products have already been banned in Finland and virginiamycin is to come under a voluntary ban in fattening pigs in Denmark from 1 April 1998.

64. It has been widely claimed by representatives of the pharmaceutical companies and some veterinary academics (for example Colgrave 1995, Viaene 1997, Taylor 1998) that since the Swedish ban in 1986 the use of therapeutic antibiotics has increased. This is true, however, it must be noted that since growth promoting antibiotics have been banned any use of antibiotics is, by definition, therapeutic. It is also true that Sweden brought about an overall 30 per cent reduction in antibiotic use between 1986 and 1988 (Björnerot 1996) and that this has been further reduced in recent years to just 50 per cent of pre-1986 levels (Wierup 1997).

Regulation and Deregulation

65. While there has been some tightening of regulatory procedures in the UK in recent years and, after review, a number of veterinary medicinal products have had their licences removed, this has occurred within a regulatory framework and regulating culture which is fundamentally flawed. The reasons for this are complex and some go back many years, but the situation has been allowed to develop through a combination of:

- subtle changes introduced by government and its failure to implement advisory committee recommendations in full;
- inadequate parliamentary scrutiny; and
- an unhealthy closeness which has developed between the Veterinary Medicines Directorate (VMD) and the pharmaceutical industry.

66. The VMD is charged with "safeguarding public health". However, there are a large number of agencies, departments and organisations involved in the regulation of veterinary medicines and there appears to be a marked lack of coordination between them relating to food safety aspects of antibiotic use. In addition to a core animal health section retained by MAFF and the interest of the Department of Health:

- licensing and residue monitoring are carried out by the Veterinary Medicines Directorate.
- monitoring and research relating to pathogenic organisms is undertaken by the Veterinary Laboratories Agency (VLA);[8]
- a significant amount of research relating to antibiotic use in agriculture, some with particular reference to transferable antibiotic resistance, is carried out by the Public Health Laboratory Service. One would also expect that research in this area would also be carried out by the Institute of Animal Health at Compton, although recent emphasis is likely to have been on BSE.
- policing of prescriptions and the incorporation of antibiotics in livestock feed is monitored by the Royal Pharmaceutical Society of Great Britain;

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[7] See Annex II.

[8] Formerly the Central Veterinary Laboratories.

- the monitoring of veterinary medicines use on farms is undertaken by the State Veterinary Service, animal health officers, practising veterinary surgeons and recently also by trading standards officers; and
- in addition, disciplining of veterinary surgeons is carried out by the Royal College of Veterinary Surgeons and the British Veterinary Association has an educational programme designed to update veterinary surgeons on legislation relating to the prescribing of antibiotics.

67. The lack of concerted and coordinated action by the various departments, agencies and organisations is largely due to the failure of government to implement a key recommendation of the 1969 Swann Committee. In Chapter XI of the Swann Report (Swann Committee 1969) the committee recommended that:

> *"One . . . committee should have overall responsibility for the whole field of the use of antibiotics and related substances whether in man, animals, food preservation, or for other purposes."*

However, as Sir James Howie (1981), a former director of the Public Health Laboratory Service, stated:

> "In the event this fundamentally important Swann Recommendation was weakened. What emerged was . . . a Joint Sub-Committee for Antimicrobial Substances (JCAMS) under two parent committees: the Committee for Safety of Medicines (CSM) of the Department of Health and Social Security and the Veterinary Products Committee of the Ministry of Agriculture, Fisheries and Food."

68. The principal brief of the Swann committee related to transferable drug resistance and despite the efforts of some industry-based scientists to undermine it (see for example Mackinnon 1981) much of the committee's report is still relevant today. In relation to antibiotics the report states:

> "We are convinced that one body must be able to look at all uses and their possible inter-relationships."

69. The Swann report further envisaged that in addition to advising on all aspects of antibiotic usage such a body would periodically review existing antibiotics to see if there should be "greater relaxation" or "more restrictive control".

70. By establishing an advisory sub-committee with two masters, rather than a single decision-making committee, government prevented several important functions envisaged by the Swann Committee from being carried out. The JCAMS was kept busy reviewing applications from manufacturers, but its advice was not always heeded and it was given no resources to examine aspects of applications which gave it cause for concern. It had no powers to review decisions on antibiotics made by other committees, nor even to review the use of previously licensed antibiotics. It was not even empowered to gather statistics on antibiotic usage, which had been another of the key Swann recommendations (Swann Committee 1969, paragraph 11.5). In addition the Safety of Medicines Committee rarely approached it. In 1980 the committee members felt so concerned that the situation was getting out of hand and that serious public health consequences might arise, that they put proposals for the committee's reform to the Ministers of Health and Agriculture. Instead of accepting these proposals, or even discussing them with the committee, the Ministers' reaction was immediately to abolish the committee. A move which was criticised in the medical, veterinary and farming press (Anon 1981, Walton 1981a, Walton 1981b).

71. Both avoparcin and spiramycin were licensed one year before the establishment of the JCAMS in 1973 and it seems likely that it was to these that an editorial in the British Medical Journal was principally referring when it bemoaned the fact that the JAMCS "had no powers to review the effects of antibiotics already approved" (Anon 1981). This was also a principal concern of Walton (1981a) and Howie (1981) who commented:

> "Is it not ironical that we now face another epidemic spread of salmonellas affecting calves and humans . . . indeed just such an episode as brought about the Swann Committee Report, one of whose main provisions is now being so unwisely set aside?"

72. It is difficult to avoid the conclusion that first, in not following the Swann recommendations more closely and second, in disbanding a committee made up of microbiologists eminently qualified to consider issues the possible side effects on humans from the use of some antibiotics in livestock production, successive administrations acted unwisely, were cavalier in their approach to the licensing of antibiotics and were perhaps more influenced by the lobbying of pharmaceutical companies than they were concerned for the long term well being of the population.

15 March 1998

Annex I

SOIL ASSOCIATION STANDARDS ON ANTIBIOTICS

The Soil Association sets and polices standards for organic food production through The Symbol Scheme which is registered with the United Kingdom Register of Organic Food Standards (UKROFS) as an Approved Organic Sector Body and is licensed to certify organic food production and processing under European Commission Regulation EEC No 2092/91.

Production Standards outline the principles and practices of organic agricultural systems which, within the economic constraints and technology of a particular time, promote:

- the production of high levels of nutritious food;
- the use of management practices which sustain soil health and fertility;
- high standards of animal welfare and contentment;
- the lowest practical levels of environmental pollution;
- minimal dependence on non-renewable forms of energy and the burning of fossil fuels; and
- enhancement of the landscape, wildlife and wildlife habitat.

In relation to the use of antibiotics the Soil Association Standards state:

> *"The use of antibiotics and some other conventional products may reduce natural immunity and, although providing rapid initial recovery, can leave an animal more prone to reinfection. They should only be used under the advice of the nominated veterinary surgeon where effective alternative treatments are not available and where they are considered the best method of reducing suffering, saving life or restoring an animal to health."*
>
> *5.711: "Permitted: The use of antibiotics in clinical cases where no other remedy would be effective or after major trauma as a consequence of surgery or accident.*
>
> *5.712: Prohibited 1) The Prophylactic use of antibiotics on a herd or flock basis. 2) The prophylactic use of Dry Cow Therapy on a herd or flock basis."* (Anon 1997b).

Annex II

EVIDENCE OF THE TRANSFER OF DRUG RESISTANCE FROM FARM ANIMALS TO THE HUMAN POPULATION

Drug resistant strains of Campylobacter, Salmonella, Enterococci and *Ecoli* are known to have passed from animals to people (WHO 1997c). Vancomycin-resistant enterocooci (VRE) are known to have passed from animals to man (Bates et al 1994, Bogaard et al 1997) and cross-resistance is also known to have occurred with the macrolides (Anon 1997d, Moore et al 1996), the lincosamidines and streptograms (Fussell 1981, Witte 1997e, Moore et al 1996) and with the fluroquinolones (Thelfall et al 1996).

There is also a possibility that multiple drug-resistance could be transferred to other infectious diseases in certain situations. In particular the possibility that resistance to the glycopeptide Vancomycin could be transferred from VRE, where it is now becoming established, to Methicillin-resistant *Staphlycoccus aureus* (MRSA), presents an alarming scenario with the potential for a major public health crisis (Anon 1997e).

The increasing incidence of Vancomycin-resistant enterococci has been linked to the use of the related glycopeptide, avoparcin. While the use of avoparcin has been suspended throughout the EU since 1 April this year, the importation of meat, produced using avoparcin, from non-EU countries is still permitted and this provides an opportunity from the continuing flow of van-A genes (the effective mechanism of glycopeptide resistance) into the EU and the UK.

It has further been suggested that the spread of resistance between avoparcin and VRE may be assisted by the fact that avoparcin is not pure and contains DNA from the producing organism, with the implication that this is the same organism from which vancomycin is derived (Davies 1997).

Annex III

FURTHER EVIDENCE RELATING TO SALMONELLA

It is now estimated that while the "reported" cases of food poisoning in Britain during 1997 will have exceeded 100,000 for the first time, the reality is that more than one million people will have been affected (Gilbert 1998), since it is estimated that only about 10 per cent of cases are reported. The number of cases of salmonella reported to the PHLS rose from about 5,000 in 1965 to over 25,000 in 1989 (Cooper et al 1993) and now stands at about 40,000 (Coghlan 1998).

Considerable effort has been put into controlling food poisoning bacteria in livestock production. After the outbreaks of *Salmonella enteritidis* in the mid-1980s, large numbers of poultry flocks were slaughtered; bacterial monitoring was introduced under the Poultry Breeding Flocks and Hatcheries Order 1993. There have been a number of MAFF research projects examining likely contributory factors such as the spread through contaminated feed and introduction via wild birds and farm cats, for example (Evans & Davies 1996). However, according to the most recent survey conducted by the PHLS, such strategy as there may be for controlling salmonella is far from effective, since one third of all frozen chickens sold in the UK are contaminated with salmonella (Coghlan 1998).

In addition to the increasing incidence of well established pathogenic strains and phage types of salmonella, a number of new strains and phage types have emerged in recent years. *Salmonella typhimurium* DT104 was first noted in 1982 but it is only in the last decade that it has emerged as clinically significant. More recently still *Salmonella hindmarsh* has affected a number of sheep flocks causing significant mortality and a small number of food poisoning cases in man. While the organism has been known for some time and is endemic in the environment in certain areas, this is the first time it is known to have become clinically pathogenic (Daniel et al 1997).

It should further be noted that some strains of salmonella have extended their infective range. For example, *Salmonella typhymurium* DT104 was initially only associated with cattle, but since 1993 it has become the principal strain of salmonella in sheep and poultry (Threlfall et al 1997) and is also found in pigs (Anon 1996). In 1969 no sheep flocks in the UK had been infected with any pathogenic strain of salmonella (Swann Committee 1969) whereas it is now widespread, and it is only in the last few years that Salmonella enteritidis phage type 4, the most common salmonella infecting egg-laying hens has begun to affect broiler poultry too and as such provided and additional opportunity for transfer to humans.

RESISTANT STRAINS

Not only has the incidence and the number of pathogenic strains of salmonella increased, but these have become increasingly drug-resistant. In round figures the percentage of isolates sensitive to the 16 antibiotics normally used in evaluation tests has fallen from about 50 per cent in the early 1990s to about 10 per cent in the last two years (Anon 1996). In addition to this 94 per cent of samples sent to the Public Health Laboratory Service in London during 1995 were resistant to four or more antibiotics. Even more significantly 6 per cent were resistant to ciprofloxacin (due it is believed to the recent introduction in veterinary medicine of related fluroquinolones such as enrofloxacin) and 27 per cent to trimethoprim, an important drug often used in combination with sulphonamides to treat respiratory and urinary infections in humans. In addition 13 per cent of cattle herds affected by *Salmonella typhimurium* DT104 have some cases of trimethoprim resistance. In contrast in 1973 and 1974, before the emergence of *Salmonella typhimurium* DT104, all 5,905 known strains of salmonella were sensitive to trimethoprim/sulphonamide (Sojka et al 1977).

The transmission of some salmonella strains from animals to humans is well documented (eg Wall et al 1995) and concern over drug-resistant salmonella is of course not new (Anderson 1968, Threlfall et al 1980). It was for example a key factor behind the establishment of the Swann Committee in 1968. As such it is of note that the committee concluded:

> "We agree that the outbreaks of infection due to Salmonella typhimurium phage type 29 . . . include instances in which human disease and death resulted from multiple-resistant organisms which acquired their resistance through the use of antibiotics in animals" (Swann Committee 1969 paragraph 5.18).

Antibiotics are not normally used to treat salmonella infection in the human population. Most people recover from salmonella food poisoning without the need for antibiotic treatment, although they are essential in the case of typhoid, paratyphoid and on other occasions when salmonella infection becomes systemic (Swann Report 1969 Chapter IV). In contrast, therapeutic antibiotics are generally used to treat salmonella infections in farm animals (Wall 1997). Therapeutic antibiotics, including fluroquinolones, are also used in attempts to eradicate salmonella infections from poultry flocks (Humbert et al 1997) and from pigs (Raemdonck et al 1994).

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ACKNOWLEDGEMENTS

The evidence in this submission to the House of Commons Agricultural Select Committee has been taken from a Soil Association report on Antibiotic use in Agriculture due to be published Spring 1998. The report is being prepared by Dr Tracey Clunies-Ross, Dr Mark Redman and Richard Young and has been made possible through the support of the WA Cadbury Charitable Trust, the Polden-Puckham Charitable Foundation and the Summerfield Charitable Trust.

APPENDIX 89

Supplementary Memorandum submitted by the National Farmers' Union of England and Wales (C138)

THE IMPACT OF REDUCED PESTICIDE USE IN CONVENTIONAL SYSTEMS

The trend in conventional agriculture over the past 50 years has been towards simpler, more specialised systems that can take best advantage of two well understood economic trends:

(a) that increased crop yields associated with higher levels of input use usually increase profitability through the simple expedient of reduced costs per unit of output; and

(b) the adoption of simpler, more specialised production systems offers the best opportunity to maximise the use of skilled staff and make the most economic use of modern equipment.

Recognising that there is a "law of diminishing returns" in all areas of agricultural production and that wasteful use of inputs can create environmental pressures, the modern concept of integrated crop management has been developed. This concept seeks to make maximum use of agronomic relationships with the least dependence on external inputs, whilst still wishing to exploit the economic trends mentioned above.

Any further reduction in the use of pesticides to seek other potential benefits will put constraints on fertiliser use, reduce crop yield and limit stocking rates in animal systems. This reductionist approach, which goes beyond the constraints defined by integrated crop management has been tested in recent years at various centres. Examples are:

1. *Institute of Arable Crops Research—Long Ashton LIFE PROJECT (EU funded)*

The first five years of this EU funded project (1989–94) compared yields, costs and gross margins from two rotations, conventional and integrated, and at two levels of input use.

Production costs were reduced by around 30 per cent, yield reductions averaged 15 per cent across a variety of crops in the two rotations. Gross margin results were best in the conventional rotation but, when taken across both rotations at two different levels of input tended to favour the lower input strategy—a mixed result.

2. *LINK funded integrated Farming Systems Project*

This UK funded project started in 1991–92 at two different centres. Results reported after the first four years indicated a 33 per cent reduction in pesticide use across all crops; comparable gross margins were reported across the total of the six sites between the integrated, lower input systems and the more conventional ones. The reports for this multi-site trial do stress the variation in results between different sites, a factor that the Long Ashton Work cannot show.

In this very brief review of variable input use in conventional systems the point has to be made that farmers would be very reluctant to consider lower output options if no market premium exists. The relationship between higher yield and higher gross margin, with potential higher profit, has always been very strong and well documented.

The two investigations above are specific illustrations of the economic potential of lower output systems with a partial reduction in pesticide use.

19 March 1998

APPENDIX 90

Supplementary Memorandum submitted by the Ministry of Agriculture, Fisheries and Food (C140)

Update on information contained in the memorandum of evidence submitted by the Ministry of Agriculture, Fisheries and Food, the Department of Health, Scottish Office, Welsh Office and Northern Ireland Office (C58)

1. INTRODUCTION

The Agriculture Select Committee has requested an update of the statistical information contained in the Government's original memorandum on food safety. It has also asked for further details of the Department of Health's Infectious Intestinal Disease study. This document fulfils these requests.

2. REVISED STATISITCAL INFORMATION

The Government wishes to update the statistical information contained in its earlier memorandum as follows (page numbers refer to the published version of the evidence):

2.1: *Chapter 3: Trends in the incidence of food poisoning*

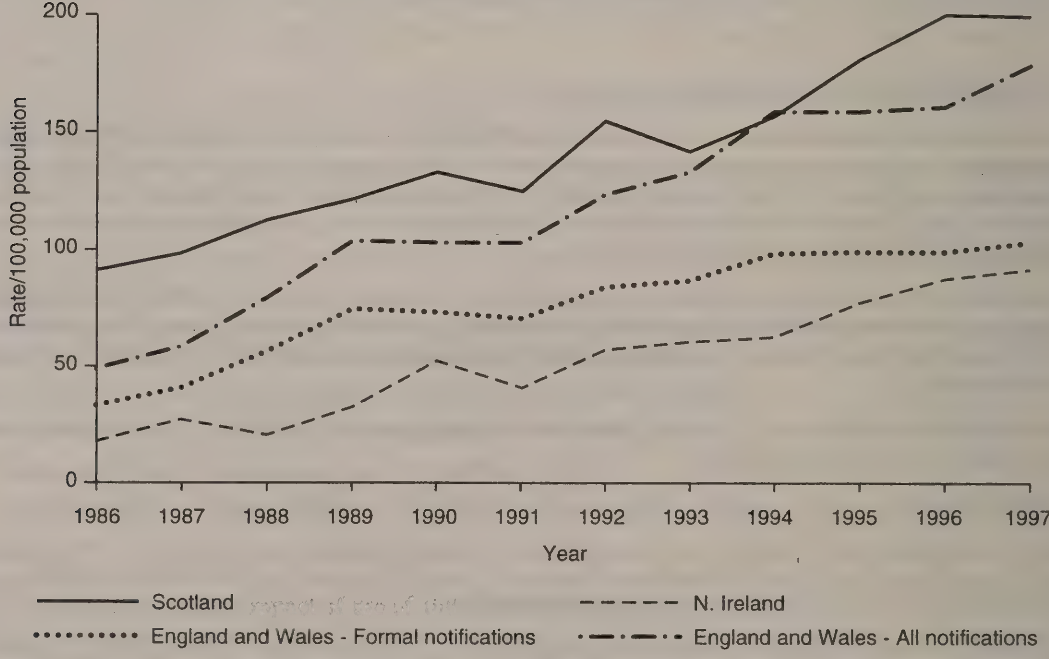
NOTE: In the following tables and graphs, figures for England and Wales are provisional

REVISED FIGURES FOR FOOD NOTIFICATIONS

Year	*Scotland*	*Northern Ireland*	*England and Wales—Formal notifications*	*England and Wales—All notifications*
1986	91.1	17.4	32.9	47.7
1987	98.7	26.9	40.5	58.3
1988	112.6	19.1	55.1	78.7
1989	120.8	31.6	75.2	103.7
1990	132.4	51.5	72.6	102.5
1991	123.7	39.7	69.1	102.8
1992	154.1	56.6	83	123.5
1993	140.1	58.5	86.1	133.3
1994	156.4	61.1	97.7	159
1995	181	76.8	98	158.3
1996	199.6	87.5	97.5	160
1997	198.6	91.8	102.9	179.6

Replacement for Figure 1, p11

FOOD POISONING NOTIFICATIONS ENGLAND AND WALES, SCOTLAND AND NORTHERN IRELAND 1986–1997

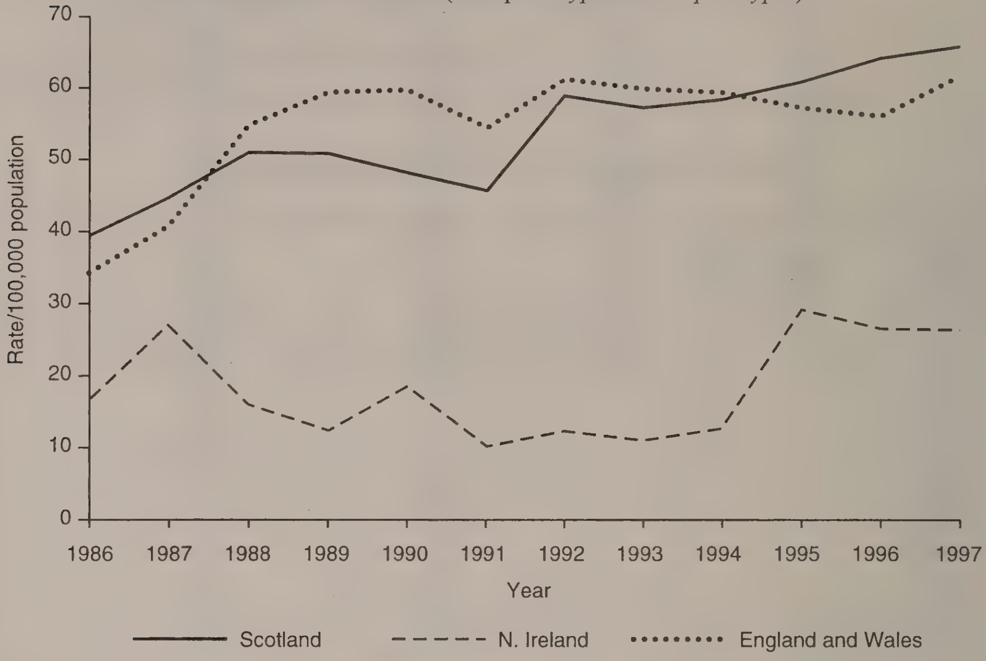


SALMONELLOSIS: LABORATORY REPORTS OF FAECAL ISOLATES:
all *Salmonellas* 1986–97 (Except *S. typhi* and *S. paratyphi*)

Year	*Scotland*	*N Ireland*	*England and Wales*
1986	39.3	16.5	33.8
1987	44.7	26.8	40.8
1988	50.7	16	54.4
1989	50.6	12	59.2
1990	47.8	18.6	59.2
1991	45.6	10	54.2
1992	58.5	12.1	61.1
1993	57	10.7	59.6
1994	57.9	12.2	58.9
1995	60.5	29	56.6
1996	63.7	26.2	55.7
1997	65.4	26	61.6

Replacement for Figure 2, p12

SALMONELLOSIS: LABORATORY REPORTS OF FAECAL ISOLATES:
all *Salmonellas* 1986–97 (Except *S. typhi* and *S. paratyphi*)

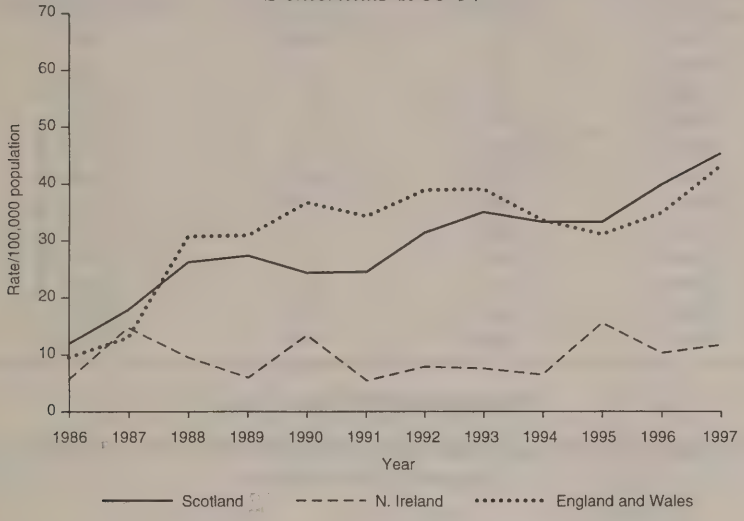


SALMONELLOSIS: LABORATORY REPORTS OF FAECAL ISOLATES:
S enteritidis 1986–97

Year	*Scotland*	*N Ireland*	*England and Wales*
1986	12.1	5.7	9.5
1987	18.4	14.9	13.6
1988	26.4	9.5	30.6
1989	27.5	6.1	31.1
1990	24.3	13.6	37
1991	24.8	5.6	34.2
1992	31.7	7.6	39.2
1993	35.1	7.7	39.4
1994	33.1	6.3	33.7
1995	33.6	15.8	31
1996	40.1	10.6	35.1
1997	45.6	12.2	43.7

Replacement for Figure 3, p12

SALMONELLOSIS: LABORATORY REPORTS OF FAECAL ISOLATES:
S enteritidis 1986–97

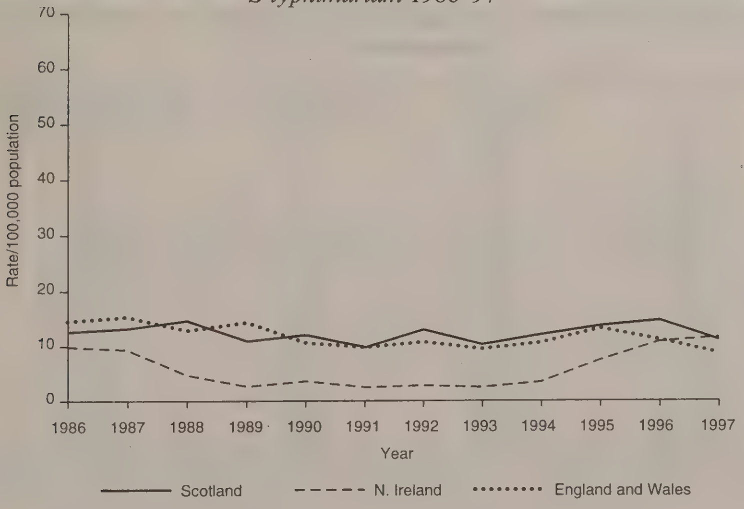


SALMONELLOSIS: LABORATORY REPORTS OF FAECAL ISOLATES:
S typhimurium 1986–97

Year	*Scotland*	*N Ireland*	*England and Wales*
1986	12.6	9.6	14.4
1987	13.3	9.5	15.2
1988	14.5	4.6	12.8
1989	10.8	2.5	14.4
1990	11.9	3.3	10.7
1991	9.8	2.4	10.4
1992	13	2.8	10.5
1993	10.3	2.1	9.3
1994	11.9	3.8	10.7
1995	13.6	7.9	13
1996	14.5	10.8	10.7
1997	11	11.4	8.9

Replacement for Figure 4, p13

SALMONELLOSIS: LABORATORY REPORTS OF FAECAL ISOLATES:
S typhimurium 1986–97

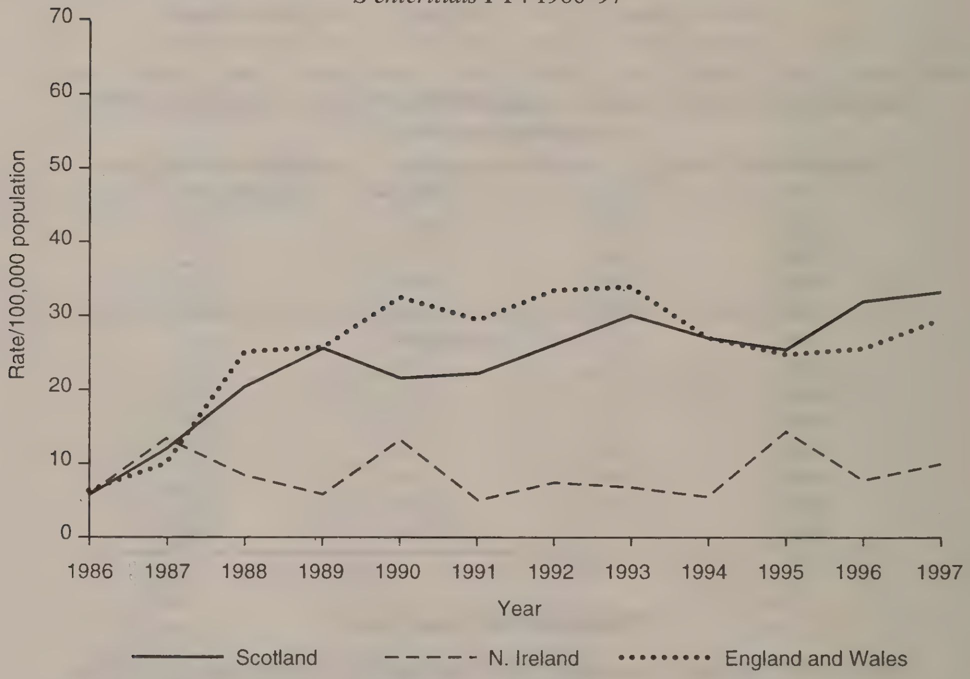


SALMONELLOSIS: LABORATORY REPORTS OF FAECAL ISOLATES:
S enteritidis PT4 1986–97

Year	*Scotland*	*N Ireland*	*England and Wales*
1986	5.5	4.9	5.9
1987	11.5	13.1	9.9
1988	19.7	8	24.8
1989	25.1	5.2	25.5
1990	21.1	13.2	31.8
1991	21.6	4.3	28.8
1992	25.6	6.8	33.1
1993	29.5	6.2	33.5
1994	26.5	5	26.7
1995	24.7	14	24.1
1996	31.4	6.9	25.2
1997	32.9	9.6	29.1

Replacement for Figure 5, p13

SALMONELLOSIS: LABORATORY REPORTS OF FAECAL ISOLATES:
S enteritidis PT4 1986–97

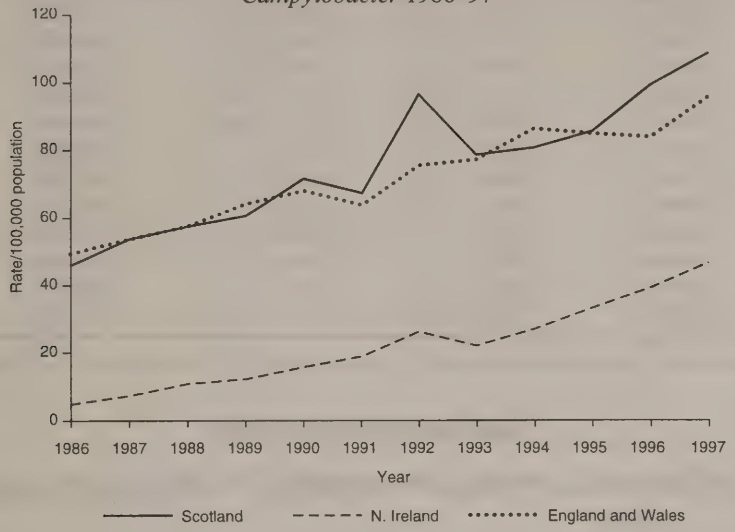


CAMPYLOBACTERIOSIS: LABORATORY REPORTS OF FAECAL ISOLATES:
Campylobacter 1986–97

Year	*Scotland*	*N Ireland*	*England and Wales*
1986	46.3	4.7	49.5
1987	53.6	7.7	54.3
1988	57.1	11.0	57
1989	60.4	12.1	64.2
1990	71.1	15.4	68
1991	67.2	19.1	63.9
1992	96.2	25.9	75.2
1993	78.1	21.6	76.6
1994	80.8	26.8	86
1995	85.2	33.8	84.7
1996	99.4	39.2	83.3
1997	107.9	46.5	96.2

Replacement for Figure 6, p14

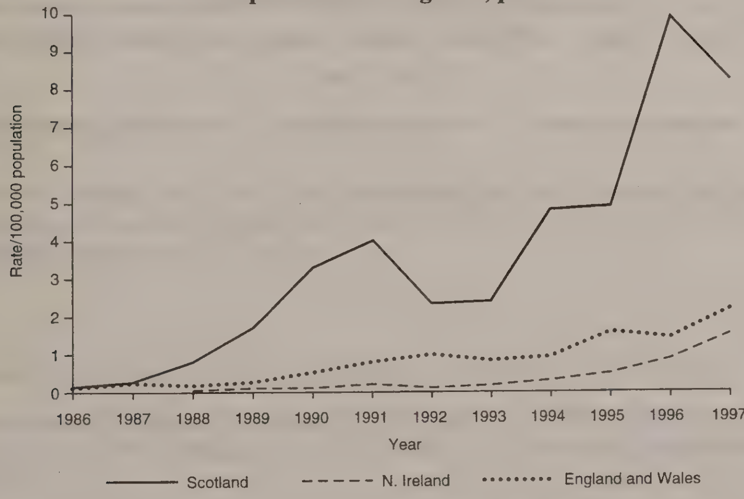
CAMPYLOBACTERIOSIS: LABORATORY REPORTS OF FAECAL ISOLATES: *Campylobacter* 1986–97



ESCHERICHIA COLI O157:H7: LABORATORY REPORTS OF FAECAL ISOLATES: 1986–97

Year	*Scotland*	*N Ireland*	*England and Wales*
1986	0.08		0.15
1987	0.23		0.18
1988	0.77	0	0.1
1989	1.71	0.06	0.23
1990	3.23	0.06	0.49
1991	3.96	0.12	0.75
1992	2.25	0.06	0.92
1993	2.32	0.12	0.75
1994	4.72	0.18	0.8
1995	4.81	0.42	1.53
1996	9.9	0.84	1.3
1997	8.2	1.5	2.1

Replacement for Figure 7, p15

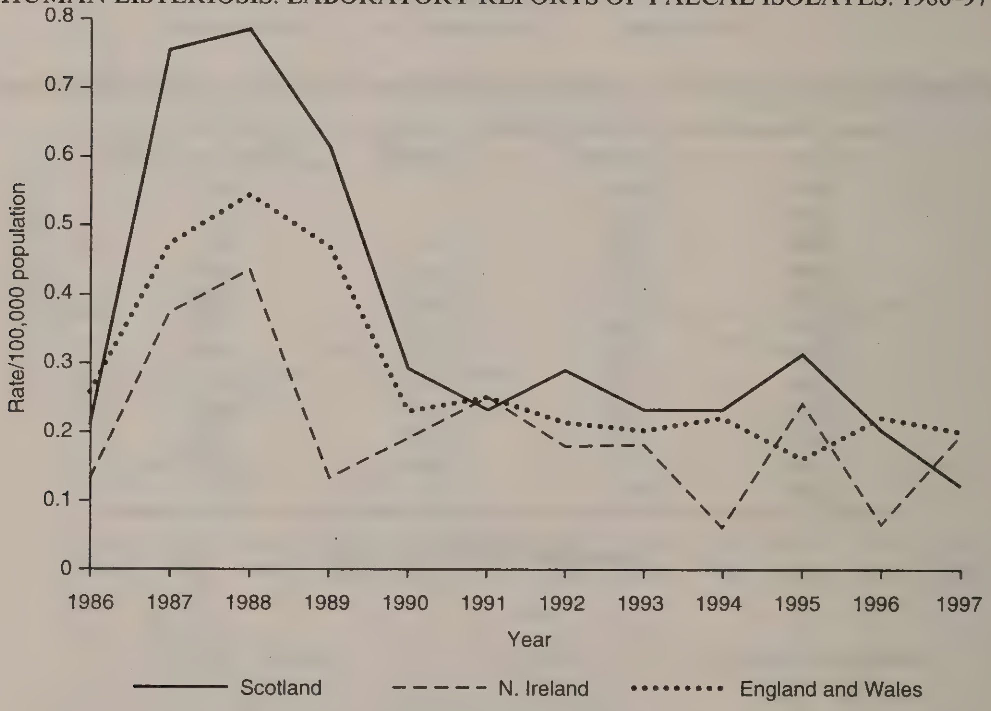


HUMAN LISTERIOSIS: LABORATORY REPORTS OF FAECAL ISOLATES: 1986–97

Year	*Scotland*	*N Ireland*	*England and Wales*
1986	0.2	0.13	0.26
1987	0.76	0.38	0.47
1988	0.79	0.44	0.55
1989	0.61	0.13	0.47
1990	0.29	0.19	0.23
1991	0.23	0.25	0.25
1992	0.29	0.18	0.21
1993	0.23	0.18	0.2
1994	0.23	0.06	0.22
1995	0.31	0.24	0.16
1996	0.2	0.06	0.22
1997	0.12	0.2	0.2

Replacement for Figure 8, p15

HUMAN LISTERIOSIS: LABORATORY REPORTS OF FAECAL ISOLATES: 1986–97

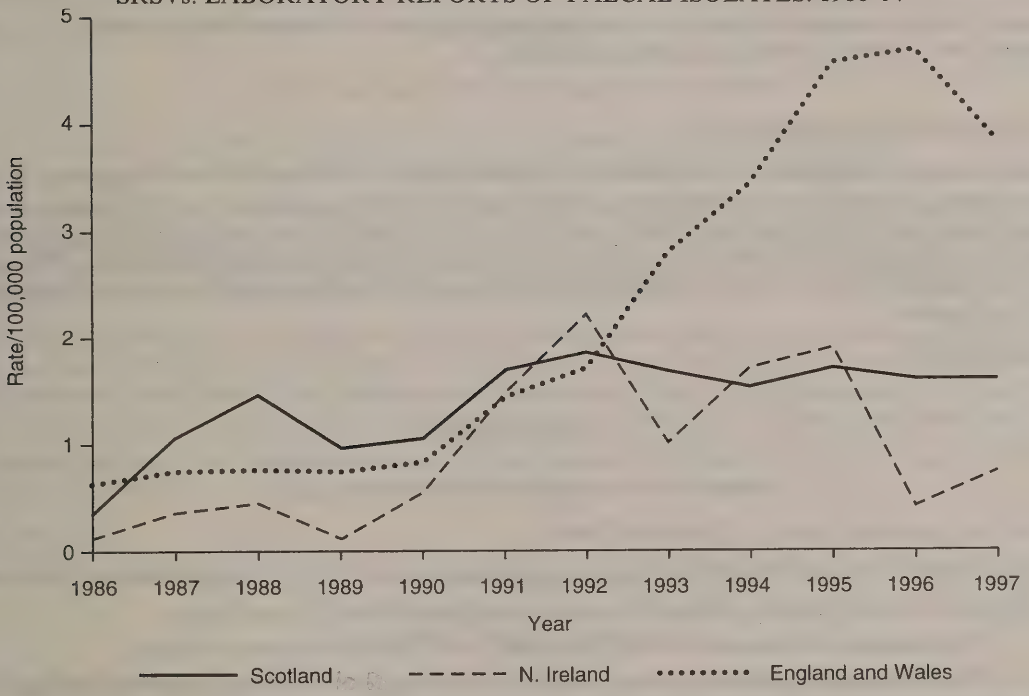


SMALL ROUND STRUCTURED VIRUSES: LABORATORY REPORTS OF FAECAL ISOLATES: 1986–97

Year	*Scotland*	*N Ireland*	*England and Wales*
1986	0.29	0.1	0.6
1987	0.98	0.3	0.7
1988	1.43	0.4	0.7
1989	0.96	0.1	0.7
1990	1	0.5	0.8
1991	1.63	1.4	1.4
1992	1.84	2.2	1.7
1993	1.64	1	2.7
1994	1.52	1.7	3.4
1995	1.71	1.9	4.6
1996	1.6	0.42	4.7
1997	1.6	0.7	3.9

Replacement for Figure 9, p16

SRSVs: LABORATORY REPORTS OF FAECAL ISOLATES: 1986–97



Finally, the 1997 date relating to Figure 10 on page 18 (Food poisoning notifications (England and Wales) and GP Consultation rates for IID (England and Wales) 1986–97) are: total food poisoning notifications 179.6, GP mean annual incidence of IID 2420.

2.2 *Chapter 5: Reducing the potential for microbiological contamination in the food chain.*

- Graph on page 25: (Reported incidents of *Salmonella enteriditis* and *Salmonella typhimurium* in broiler breeders 1991–1996). Figures for 1997 are *Salmonella typhimurium* 3, *Salmonella enteriditis* 24.
- Graph on page 26: (Reported incidents of *Salmonella enteriditis* and *Salmonella typhimurium* in layer breeders 1991–1996). Figures for 1997 are *Salmonella typhimurium* 0, *Salmonella enteriditis* 1.
- Table on page 26: (Salmonella reports from cattle, sheep and pigs 1990–1996). Figures for 1997 are *Salmonella enteriditis* 17, *Salmonella typhimurium* 1,019, other serotypes 886, Total (all serotypes) 1,922.
- Replace text and tables at paragraph 5.58 with the following:

"As at 1 March 1998 the numbers of licensed low and full throughput slaughterhouses in the UK were as follows:

RED MEAT SLAUGHTERHOUSES*

	England	*Wales*	*Scotland*	*N Ireland*	*TOTAL*
Full Throughput	203	14	40	14	271
Low Throughput	167	20	8	0	195
Total	370	34	48	14	466

POULTRYMEAT SLAUGHTERHOUSES

	England	*Wales*	*Scotland*	*N Ireland*	*TOTAL*
Full Throughput	86	4	6	11	107
Low Throughput	45	10	4	4	63
Total	131	14	10	15	170

*Of these, 2 premises were operating under a temporary derogation from certain structural standards

2.3 *Chapter 8: Pesticides.*

Amend the first sentence of para 8.4 on the misuse of fungicides on winter lettuce to read: ". . . in 1995, 1996 and 1997 3 growers were successfully prosecuted . . ."

3. *Infectious Intestinal Disease study.*

The Committee asked when the Department of Health's Infectious Intestinal Disease study was likely to be completed. The data for this large and complex study is still being finalised and will require detailed analysis and careful interpretation before publication. It is difficult to be precise as to timing, but the Government is confident of being able to publish a report on the findings later this year. Preliminary indications support the view that the current reporting system significantly underestimates the true magnitude of IID in England.

23 March 1998

APPENDIX 91

Extracts of letters sent by Mr Ian Daycock (C141)

The Food Standards Agency: A Force for Change

Please consider some concerns on the Principles, the Remit, and the Role of the proposed new public body.

It is felt that further far more important and basic principles should be considered:

- The principles of sustainability will be applied by the Agency to food and health.
- The environment and the ecology of the United Kingdom will be protected by the Agency in ensuring a proper husbandry of animals and food crops.
- Organic farming will be encouraged by the Agency, to allow a return to a chemically free and healthier people.
- The Agency will act with caution in the interests of the people and, if necessary, the precautionary principle will be applied.
- The Agency will act independently of specific sectoral interests.

In respect of Policy and Legislation, of serious concern is the lack of certain procedures in the consultative document:

- Appropriate procedures will be introduced by the Agency to trace, through the food chain, any source of concern in respect of disease to animals and people, and any adverse environmental effects brought about by food crops and animal husbandry.
- The Agency will enforce procedures of quality and traceability throughout the food packaging industry.
- Standards shall be set and adhered to such as BS 5750 and traceability applied world wide.
- The Agency will promulgate quality and traceability as paramount issues.

It is felt that the Agency should have some policing role, in particular for genetically engineered food products and radioactive materials in food:

- The Agency will be responsible for ensuring that no consents are issued for the release of genetically engineered (modified) organisms intended for food and/or animal feed within the United Kingdom.
- The Agency will ensure that no genetically engineered (modified) organisms intended for food or animal feed shall enter the United Kingdom.

It is felt that the Agency should have some policing role, in particular for genetically engineered food products and radioactive materials in food:

- The Agency will have the responsibility for ensuring that no radioactive waste is deliberately placed in any food, food product, or food container.
- The Agency will protect the people from absorbing radioactive material through the food chain either directly by ingestion of food, accidental ingestion of metal or other container materials, or contact with or closeness of such radioactive food containers.
- No level of man made radioactive material will be allowed in food or food containers.

Pesticides and Veterinary Medicines: of urgent consideration is the considerable application of chemicals on the land.

- The Agency will endeavour to minimize the residues of pesticides, herbicides, antibiotics, and veterinary medicines in food to eventually eliminate them.

It is hoped that these concerns will recieve an appropriate hearing.

13 March 1998

APPENDIX 92

Letter from the Health Education Authority (C142)

THE HEALTH EDUCATION AUTHORITY'S RESPONSE TO "THE FOOD STANDARDS AGENCY: A FORCE FOR CHANGE"

I am enclosing a copy of the Health Education Authority's response [not printed] to the White Paper proposing the establishment of a Food Standards Agency, since I know you have an interest in food and health matters. We believe that, in general, the proposals are excellent. We have commented principally on areas in which we have a statutory remit and a great deal of expertise.

For example, we are concerned about the lack of clarity in the White Paper on the public information and education role of the FSA. Our view is that the Agency should have a strategic and co-ordinating role in this area and should commission public information and education within a health promotion framework. This approach would avoid duplication of work and make the most efficient and effective use of resources.

Please let me know if you would find it useful to have any more information on this or on any other areas of the HEA's work.

12 March 1998

APPENDIX 93

Letter from Transorganics (C143)

Please find enclosed a copy of a draft internal report [not printed] examining the issue of *Ecoli* 0157 in abattoir wastes and the significance to the recycling of abattoir wastes. We are still awaiting reponse from Professor Pennington and other to include in final document.

IN SUMMARY

(1) We were unable to find *Ecoli* 0157 in nine waste streams examined (All of those we recycle in Scotland).

(2) We were unable to find *Ecoli* 0157 in 39 soil samples we examined. Twenty treated soils and 19 controls. Samples were from fields all over the UK.

This would seem to indicate that there is no real problem, or it is of an insignificant nature.

However if one wished to apply the precautionary principle then these are two measures one should effect.

(1) All waste materials arising from cattle should be injected into the ground. This would include all Farm Slurries as well as Abattoir wastes.

(2) Research into the survival of *Ecoli* 0157 in soil should be undertaken, so as to enable advice to be given as to the length of waiting time before animals are allowed to re enter the treated fields.

(3) Where crops are to be grown for human consumption and eaten raw, then a 12 month period should apply after application.

March 1998

APPENDIX 94

Supplementary Memorandum submitted by the Public Health Laboratory Service (C145)

The PHLS Memorandum of Evidence to the Agriculture Committee of Inquiry into Food Safety[1] has been updated to include 1997 information. Changes in the original memorandum have been made on the following pages:

Page 79[2]—Executive Statement—First paragraph; figures for cases of food poisoning in 1997 and 1996 updated in line 3, and the last sentence amended.

Page 85—1.2 Emergence of Foodborne Pathogens—O157 VTEC—Lines 3-5 updated and amended.

Page 91—1.4 SALMNET—A Network for International Surveillance of Human Surveillance—Table 1 updated and references 8-12 amended.

Page 94—1.6 The Role of National Food Surveillance in the Assessment of Food Safety—Table 1 updated.

Pages 102–114—3.1.2 Recent trends in Incidence of Food Poisoning in England & Wales.—Tables 1, 2, 3, 4, 8, 10, 11, 12, 13 & 14 updated—Figure 4 updated—Page 108—*S.typhimurium* DT104; statistics in text updated with reference to Tables 7 & 8.

Page 123—3.2.4 Food Safety Risk Associated with the Food Processing Industry—Table 2 updated.

[Executive Statement]: The Public Health Laboratory Service (PHLS) is concerned about the increasing number of cases of food poisoning in England and Wales. Indeed figures for formally notified and ascertained cases of food poisoning in 1997 are 93,913 compared with 83,233 in 1996. In addition, the number of human isolates of salmonella, campylobacter and *Escherichia coli* O157 have shown a substantial increase in 1997 as compared with 1996.

[1.2 Emergence of Foodborne Pathogens—O157 VTEC]: O157 VTEC was first isolated in the UK in 1983[18] and since then LEP has provided a reference service for these organisms. The number of cases in England and Wales confirmed by LEP has increased from 6 in 1983 to 119 in 1989 and 1,088 in 1997. When allowance is made for improvements in ascertainment during the 1980s and the effect of the recommendation by the Advisory Committee for the Microbiological Safety of Food (ACMSF) to screen all diarrhoeal samples for O157 VTEC the incidence of disease caused by these organisms still appears to be increasing. Although the reasons for this are unclear, it is likely that the present increase is real.

Studies at Sheffield PHL have demonstrated that cattle[19] and more recently sheep[20] are the major reservoirs for O157 VTEC[21], and they have been detected in carcasses and in retail meats of bovine and ovine origin. The PHLS is giving very high priority to work on O157 VTEC. Enhanced surveillance is being carried out in a national case-control study in order to identify and evaluate the risk factors. The PHLS is co-ordinating a UK-collaborative study of childhood haemolytic uraemic syndrome (HUS) which will allow comparison with a previous study made in the 1980s[22]. In addition there are two European Community (EC)-sponsored projects in progress on laboratory and surveillance studies of VTEC including strains belonging to serogroups other than O157. One such study (ENTERNET) is a multinational surveillance study that is at present restricted to European countries although there are plans to extend this study to North America and several other countries. Research work funded by the DH is investigating virulence properties of VTEC in addition to VT production with the aim of developing improved diagnostic methods.

[1.4]

Table 1

INTERNATIONAL OUTBREAKS INVESTIGATED BY ENTER/SALMNET

Outbreak	*No. of cases*	*Countries with cases*
Ecoli O157/HUS[1, 2]	12	Denmark, England and Wales, Finland, Sweden
S.anatum[3]	19	England and Wales, France, Scotland
S.agona[4]	2,000+	Canada, England and Wales, Israel, USA
S.dublin[5]	30+	France, Switzerland
S.stanley[6]	100+	Finland, USA
S.tosamanga[7]	28	Eire, England and Wales, France, Germany, Sweden, Switzerland
S.livingstone[8]	100+	Austria, Denmark, England and Wales, France, Germany, Netherlands, Sweden, Switzerland
Shigella sonnei[9-12]	100+	England and Wales, Germany, Norway, Scotland, Sweden

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[1] Ev p. 78

[2] Page numbers are of the printed memorandum.

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[1.6]

Table 1

FOOD SURVEILLANCE STUDIES (MICROBIOLOGICAL QUALITY) CARRIED OUT BY THE PHLS 1993 TO 1997

Food Surveillance Programme	*Food*	*Sampling Period*	*Total No. Samples*
ECCFCP	Ready-made foods	Jun–Dec 1993	8,224[‡]
ECCFCP	Ice-cream and other edible ices	Jun–Dec 1993	2,612
DH	Raw whole chicken	Dec 1993–Mar 1994	1,220
LACOTS/PHLS	Take-away chicken pieces	Apr–May 1994	4,055
ECCFCP	Paté	Apr–Dec 1994	3,073
LACOTS/PHLS	Pies/pasties from mobile vendors	Sept–Oct 1994	775
PHLS	Raw sausages	Jul 1994–Jan 1995	786
PHLS	Soft cheese	Jan–Feb 1995	1,437
LACOTS/PHLS	Cooked rice from restaurants and take-aways	Apr–May 1995	4,162
ECCFCP	RTE[†] refrigerated salads and crudités	Jun–Dec 1995	2,552
LACOTS/PHLS	Ice-cream scoop water	Jul—Aug 1995	1,879
LACOTS/PHLS	Cooked doner kebab meat	Oct–Nov 1995	2,538
DH	UK-produced hen eggs	May 1995–Apr 1996	13,500[§]
LACOTS/PHLS	Cooked burgers	Jan–Feb 1996	3,440
LACOTS/PHLS	Ice used to cool drinks and RTE foods	May–Jun 1996	4,359
LACOTS/PHLS	Cooked RTE out-of-shell molluscs	Jul–Oct 1996	2,425
ECCFCP	Dried and fermented meat and meat products	Jul–Dec 1996	2,981
PHLS	Retail green-top (unpasteurised) milk	Mar 1996–Jul 1997	1,097
LACOTS/PHLS	Butchery products and butchers premises	May–Jul 1997	1,400[¶]
LACOTS/PHLS	Soft ice-cream and baked egg custard tarts	Aug–Oct 1997	3,800

[‡] ready-made foods included desserts and cakes (1,057), pancakes, pies and flans (87), coleslaw and prepared salads (923), dips (248), sandwiches (324), fruit, vegetables and rice (144), savoury foods (725), meat, vegetable, pasta and seafood meals requiring reheating (494), seafood (649), meat and fish paté (359), pies and pasties (1,194), cooked meats (1,227), raw meats (793);

[†] ready-to-eat;

[§] number of boxes of eggs (6 eggs/box);

[¶] number of premises sampled (samples included up to two raw and two cooked meats and up to five environmental samples per premises).

[3.1.2 RECENT TRENDS IN INCIDENCE OF FOOD POISONING IN ENGLAND AND WALES]:

Table 1

FOOD POISONING IN ENGLAND AND WALES 1986–1997
ANNUAL CORRECTED NOTIFICATIONS ENGLAND AND WALES 1986–1997*;
RATES PER 100,000 POPULATION

Year	*Notifications*	*Rate per 100,000*
1986	23,948	47.74
1987	29,331	58.29
1988	39,713	78.66
1989	52,557	103.71
1990	52,145	102.51
1991	52,543	102.82
1992	63,347	123.54
1993	68,587	133.34
1994	81,833	158.53
1995	82,041	158.32
1996	83,233	160.03
1997†	93,780	180.31

† Provisional.

* Includes Port Health Authorities.

Source: 1986 to 1996 annual MB2 monitors; 1997 quarterly MB2 monitors
ONS population estimates.

Table 2

CAMPYLOBACTER SPP.
LABORATORY REPORTS TO CDSC;
FAECAL ISOLATES FOR ENGLAND AND WALES 1986–1997

Year	*Total*	*Rate per 100,000*
1986	24,809	49.46
1987	27,310	54.27
1988	28,761	56.97
1989	32,526	64.18
1990	34,552	67.92
1991	32,636	63.87
1992	38,552	75.18
1993	39,422	76.64
1994	44,414	86.04
1995	43,876	84.67
1996*	43,337	83.32
1997*	50,201	96.52

* Provisional.

Source: 1986–1988 CDR annual tables (computer printout); 1989–1997 Oracle computer report
ONS Population estimates.

Table 3

SALMONELLA IN HUMANS
The PHLS Salmenella Dataset for England and Wales 1986–1997

Year	*Total*	*Rate per 100,000*
1986	16,976	33.84
1987	20,532	40.80
1988	27,478	54.43
1989	29,998	59.19
1990	30,112	59.19
1991	27,693	54.19
1992	31,355	61.15
1993	30,650	59.58
1994	30,411	58.91
1995	29,314	56.57
1996	28,983	55.73
1997*	31,169	61.85

* Provisional.

Source: LEP data: 1981–1991[5], The PHLS *Salmonella* dataset: 1992 onwards.
ONS Population estimates.

Table 4

SALMONELLA IN HUMANS

The PHLS Salmonella Dataset for England and Wales 1981–1997

	S.typhimurium	*S.enteritidis*		*Other*	
Year		*(all)*	*(PT4)*	*serotypes*	*Total*
1981	3,992 (39)*	1,087 (11)*	395 (4)*	5,172 (50)*	10,251*
1982	6,089 (49)	1,101 (9)	413 (3)	5,132 (42)	12,322
1983	7,785 (51)	1,774 (12)	823 (5)	5,596 (37)	15,155
1984	7,264 (49)	2,071 (14)	1,362 (9)	5,392 (37)	14,727
1985	5,478 (41)	3,095 (23)	1,771 (13)	4,757 (36)	13,330
1986	7,094 (42)	4,771 (28)	2,971 (18)	5,111 (30)	16,976
1987	7,660 (37)	6,858 (33)	4,962 (24)	6,014 (30)	20,532
1988	6,444 (23)	15,427 (56)	12,522 (46)	5,607 (20)	27,478
1989	7,306 (24)	15,773 (53)	12,931 (43)	6,919 (23)	29,998
1990	5,451 (18)	18,840 (63)	16,151 (54)	5,821 (19)	30,112
1991	5,331 (19)	17,460 (63)	14,693 (53)	4,902 (18)	27,693
1992	5,401 (17)	20,094 (64)	16,987 (54)	5,860 (19)	31,355
1993	4,778 (16)	20,254 (66)	17,257 (56)	5,618 (18)	30,650
1994	5,522 (18)	17,371 (57)	13,782 (45)	7,518 (25)	30,411
1995	6,743 (23)	16,044 (54)	12,482 (42)	6,527 (22)	29,314
1996	5,542 (20)	18,256 (63)	13,127 (46)	5,185 (18)	28,983
1997*	4,645 (14)	22,806 (71)	15,214 (47)	4,718 (15)	32,169

* Provisional (percentage shown in brackets).

Source: LEP (formerly DEP) data: 1981–1991[5]; The PHLS Salmonella dataset: 1992 onwards.

Table 5

S.ENTERITIDIS PT4

AGE AND SEX-SPECIFIC INCIDENCE RATES PER 100,000 POPULATION ENGLAND AND WALES 1992–1996

	Age Group						
Year/Sex	*<1 yr*	*1–4 yr*	*5–9 yr*	*10–14 yr*	*15–44 yr*	*45–64 yr*	*>65 yr*
1992							
Female	109	74	30	19	28	26	18
Male	122	76	31	23	29	22	15
1993							
Female	114	77	31	20	29	26	18
Male	98	78	31	23	30	24	17
1994							
Female	88	61	24	17	23	22	15
Male	93	58	24	19	25	19	14
1995							
Female	78	52	23	17	20	20	14
Male	83	49	28	18	21	18	14
1996							
Female	80	51	25	16	22	22	17
Male	76	51	27	20	23	21	16

***S.typhimurium* DT104**

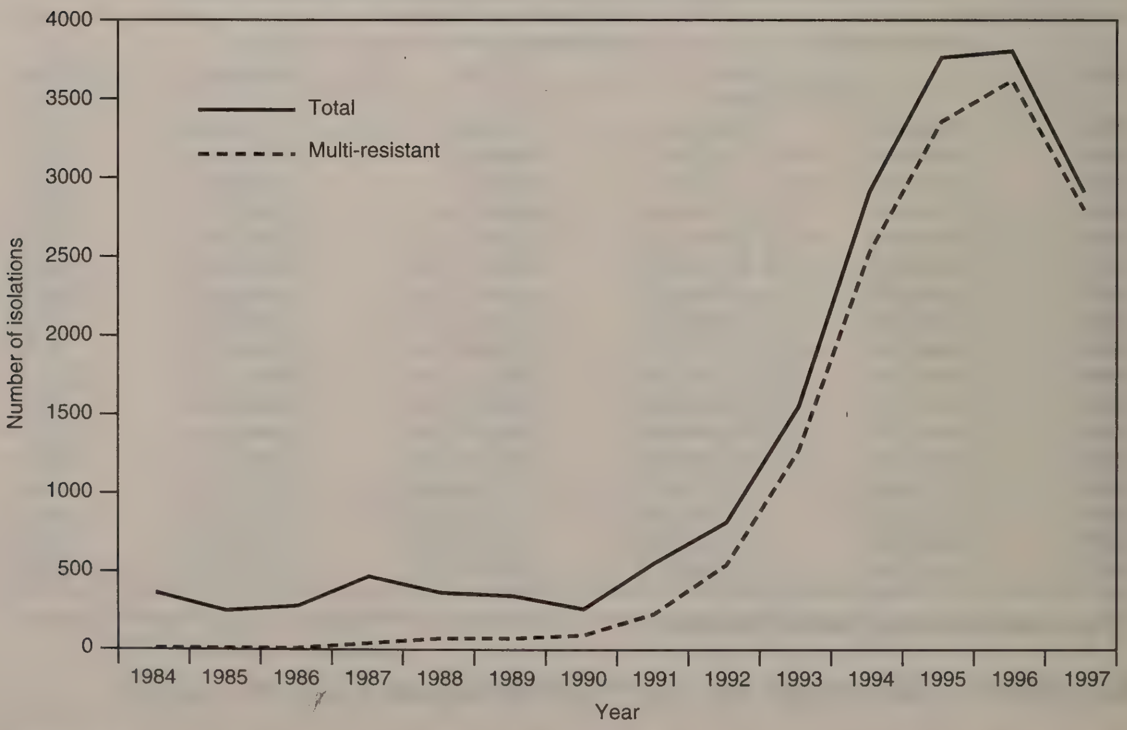
(See also section 1.2, page 8—Emergence of foodborne pathogens)

The use of antibiotics in animals and poultry as growth promoters, prophylaxis and treatment creates the opportunity to select *Salmonella* resistant to these antibiotics. Although the use of antibiotics as growth promoters has been banned in the UK increasing numbers of antibiotic resistant pathogens are being isolated from animals and from humans. Isolates referred to the LEP have increased progressively from 259 in 1990 to 2,873 in 1994 and 3,837 in 1995 and 4,006 in 1996[9]. Of particular importance is the increasing incidence of *S. typhimurium* DT104 of which 96 per cent are now multiresistant (Fig. 4).

Fig. 4

S.TYPHIMURIUM DT104 FROM HUMANS

3.1.2 Fig. 4: *S.typhimurium* DT104 from humans



Between January 1992 and December 1997 62 general outbreaks of *S.typhimurium* DT104 were reported to CDSC with most strains being resistant to at least five antibiotics (Tables 7 and 8). 1,070 were affected, of whom 531 had laboratory-confirmed infections, 75 being admitted to hospital and there were 11 deaths. The number of affected individuals in each outbreak ranged from two to 200 with a modal number of four. The number of individuals at risk was reported in 32 outbreaks and the modal attack rate was 33 per cent (range 13–83 per cent). 73 per cent (45 out of 62) of outbreaks occurred between May and September with 21 per cent (13 out of 62) occurring in July. The duration of outbreaks varied between one and 56 days with the modal duration being four days. Outbreaks occurred throughout England and Wales but were not evenly distributed according to population density, with an excess of outbreaks reported from the North and South-West.

Table 8

S.TYPHIMURIUM DT104; ENGLAND AND WALES 1996–97

DHA	*Location*	*Mode of Transmission*	*No.ill*	*Cases positive*	*Suspect vehicle*	*Evidence*	*R-Type*
North Cumbria	Farm	F	3	2	Unpasteurised milk	M	ACSSuT
Herefordshire	Hotel	F	10	3	Roast beef	D	ACSSuT
Wakefield	Restaurant	U	2	1	Chicken tikka	D	ACSSuTTm
Merton, Sutton and Wandsworth	Private House	F	51	18	Chicken with rice	S	ACSSuT
Dudley	Private House	F	14	10	Chicken drumsticks	S	ACSSuT ACSSuTTm
North Derbyshire	Residential institution	E	26	17	None	–	ACSSuT
Birmingham	Restaurant	F	16	11	Boiled rice	M	ACSSuT
Manchester	Public house	F	6	4	Roast lamb	D	–
East Riding	Residential institution	E	3	3	Chicken	D	Sensitive
Cornwall and Isles of Scilly	Private house	O	3	3	Animal contact	M	ACSSuT
United Health	Hospital	U	2	2	None	–	–
Lincolnshire	Private house	F	9	5	None	–	–
Northallerton	Residential institution	P	23	7	None	–	ACSSuT
Wiltshire and Bath	Hospital	P	4	4	None	–	ACSSuT
North West Lancashire	Hotel	F	13	3	Turkey	D	ACSSuTNxCp
East Riding	Retailer	E	12	6	Prawn mayonnaise sandwich	M	–
Somerset	Residential institution	F	7	6	Lemon meringue pie made with raw shell eggs	S	ACSSuT
Newcastle	Hospital	F	36	12	None	–	ACSSuTTm
East Kent	Hospital	F	38	20	None	–	ACSSuT
Newcastle	Retailer	F	34	34	Cooked meats	D	ACSSuTTm
N Essex	Armed services	F	17	12	None	–	ACKSSuTTm
Mid Surrey	School	E	30	20	Turkey burger and spaghetti bolognese	D	ACSSuT
Rochdale	Restaurant	F	4	1	None	–	ACSSuT
S Cumbria	Public house	F	20	20	None	–	ACSSuT
County Durham	Club	F	22	21	None	–	ACSSuT
W Surrey	Canteen	F	5	5	None	–	ACSSuT
St Helens and Knowsley	Restaurant	F	8	8	None	–	
E Sussex	Residential institution	P	4	2	None	–	ACSSuT
Bury and Rochdale	Retailer	U	11	4	None	–	ACSSuT
N Wales	Residential institution	U	4	1	None	–	ACSSuT
County Durham	Private house	F	15	8	None	–	ACSSuTTm

M, Microbiological; D, Descriptive; S, Statistical; F, Food; U, Unknown; E, Environmental; O, Other; P, Person-to-person.
R-Type, Antibiotic resistance-type; A, ampicillin; C, chloramphenicol; S, streptomycin; Su, sulphonamides; T, tetracyclines; N, neomycin; Cp, ciprofloxacin; Tm, trimethoprim.

OUTBREAKS OF *Ecoli* O157 in England and Wales 1987–1996

(See also Section 1.2, page 8—Emergence of foodborne pathogens).

There is a rising trend in the number of outbreaks of O157 VTEC infection in England and Wales (Table 10). Analysis of outbreak data shows that patients with O157 VTEC infection are 20 times as likely to be admitted to hospital than those with other IID, the case fatality rate for O157 VTEC infection is 37 times that for other IIDs.

Table 10

VT-PRODUCING *E.COLI* O157

STRAINS EXAMINED BY PHLS LEP;
ISOLATIONS FROM HUMANS FOR ENGLAND AND WALES 1991–1997

Year	*Total*	*Rate per 100,000*
1991	361	0.71
1992	470	0.92
1993	385	0.75
1994	411	0.80
1995	792	1.53
1996*	660	1.27
1997*	1087	2.09

*Provisional

Most outbreaks are likely to be foodborne in origin although confirmatory microbiological evidence is rarely available. Cross-contamination of cold cooked meats and other ready-to-eat foods is thought to be an important cause of outbreaks of O157 VTEC infection in England and Wales. Cross-contamination has been identified as a problem in butchers' shops selling both raw meat and ready-to-eat foods, and also in catering establishments, where a variety of foods can become contaminated if strict hygiene standards are not maintained. Few outbreaks of O157 VTEC infection have been shown to be associated with the undercooking of minced beef products in England and Wales.

Person-to-person spread of disease has been shown to be important in institutional settings, especially in nurseries and residential homes for the elderly. Disease can also be acquired through contact with livestock on farms. In recent years there have been an increasing number of outbreaks and sporadic cases of O157 VTEC infection where livestock have been shown to be the source of infection (Table 11). In particular, small outbreaks have been associated with visits to open farms where children are encouraged to handle the animals such as calves, lambs and goats.

Table 11

OUTBREAKS OF O157 VTEC INFECTION IN ENGLAND AND WALES 1987–1997

Year	*Health Region*	*Setting*	*No. of cases (deaths)*	*Possible route of transmission*
1987	West Midlands	Community	26	Turkey roll sandwiches
1988	East Anglia	Community	49(1)	Raw potatoes
1989	Oxford	Community	8	
1990	Wales	Psychogeriatric hospital	4	Person-to-person
	Yorkshire	Youth custody centre	7	
	Oxford	Playgroup	7	
1991	NW England	Fast food restaurant	23	Beefburgers
	Oxford	School trip	6	
	NW England	Community	17	Yoghurt
	Wales	Nursery	10	Person-to-person
1992	NW England	Psychiatric hospital	14(3)	Person-to-person
	Trent	Nursing home	5(2)	
	Oxford	Nursery	37	
	Trent	Public house	19(1)	Food
	Wessex	Scout camp	3	Food
	Northern	Community	4	Cold cooked meat
1993	Trent	Community	7	Raw milk
	W Midlands	Function	9	Beef

Year	*Health Region*	*Setting*	*No. of cases (deaths)*	*Possible route of transmission*
	Various	Community	4	
	SW Thames	Community	7(1)	Paddling pool
	W Midlands	Community	4	Barbecue
	Yorkshire	Community	17	
	Wales	Butcher's shop	6	Meat
1994	Various	Foreign travel (Majorca)	5	
	Trent	Open farm	7	Animal contact
	Mersey	Nursery	12	Person-to-person
	W Midlands	Community	3	
	Northern	Nursing home	7(2)	Person-to-person
1995	Wessex	Community/hospital	26	Sandwiches
	NE Thames	Hotel	5	Food
	NW England	Residential home	3(3)	Person-to-person
	Northern	Butcher's shop	12(1)	Meat
	Northern	Restaurant	5	Salads
	East Anglia	Holiday camp	4(1)	
	Wales	Nursery/community	49	Person-to-person
	W Midlands	Butcher's shop	11	Meat
	Various	Community	3	
	Northern	Nursery	4	Person-to-person
	SW England	Farm	4	
1996	Trent	Butcher's shop	5	Meat
	Yorkshire	Community	4	Raw milk
	Trent	Community	4	
	NW Thames	Canteen	3	Cooked meat
	SW England	Holiday camp	2	Mixed food
	Northern	Community	4	
	W Midlands	College	7	Mixed food
	SW England	Nursery	4	Person-to-person
	Trent	Butcher's shop	5	Meat
	Wessex	Prison	5	Food
	SW England	Community	6	
	NW England	Community	12	Milk
	Trent	Community	4	
1997*	East Anglia	Restaurant	3	Food
	Trent	Restaurant	9	Food
	Various	Foreign travel (Fuerteventura)	8	Contaminated well water
	Trent	Community	2	Person-to-person
	Yorkshire	Community	6	Raw milk
	Trent	Community	21	Milk
	Yorkshire	Community	6	
	W Midlands	School	4	
	Yorkshire	Restaurant	3	Food
	NW Thames	Open Farm	3	Animal contact
	Various	Music festival	9	Animal contact
	Yorkshire	Foreign travel	3	
	Trent	Open Farm	2	Animal contact
	Trent	Open Farm	2	Animal contact
	Trent	Nursery	8	Person-to-person
	Various	Farm camp	3	Animal contact
	W Midlands	Nursing home	3(1)	
	Mersey	Nursing home	3	Person-to-person
	East Anglia	Community	7	
	W Midlands	Wedding	21	Food
	Yorkshire	Hospital	7(1)	Person-to-person
	East Anglia	Open Farm	5	Animal contact
	NW England	Community	10	
	NW England	Community	5	Cheese (raw milk)
	NW England	Community	4	
	East Anglia	Restaurant	5	Food

*Provisional. *Source:* PHLS

L.monocytogenes

The number of cases of listeriosis in England and Wales rose rapidly after 1986, peaking between 1987–89 (Table 12). However, this peak was associated with contaminated imported paté. Following withdrawal of this product the number of cases declined and have remained at an annual rate similar to that reported for the early 1980's.

Table 12

HUMAN LISTERIOSIS IN ENGLAND AND WALES: 1983–97

Year	*Non-pregnancy associated cases*	*Pregnancy associated cases*	*Total*
1983	67	44	111
1984	77	35	112
1985	77	59	136
1986	87	42	129
1987	136	102	238
1988	164	114	278
1989	123	114	237
1990	91	25	116
1991	94	33	127
1992	81	25	106
1993	85	17	102
1994	87	25	112
1995	78	7	85
1996*	99	16	115
1997*	96	22	118

*Provisional

Source: Laboratory reports to the PHLS CDSC and strains sent to the FHL for confirmation and typing. Reports are by date of specimen. Mothers and babies are counted as one case.

INCIDENCE OF GASTROINTESTINAL INFECTIONS IN ENGLAND AND WALES: 1996 TO 1997

The total numbers of food poisoning cases in England and Wales have risen significantly during 1997 compared to the same period in 1996. Figures for formally notified and ascertained cases of food poisoning in 1997 are 93,913 compared to 83,233 in 1996. The incidence of O157 VTEC has increased by 65 per cent in 1997 compared to that in 1996 (Table 13). Also of concern, is the rise in incidence of *S.enteritidis* PT6 (69 per cent) in 1997 compared to 1996.

OUTBREAKS IN INFECTIOUS INTESTINAL DISEASE

Most IID outbreaks during 1992 to 1996 were caused by small round structured viruses (SRSV) (50 per cent; 1013/2027). *Salmonella* spp. accounted for 31 per cent (636/2027) outbreaks of IID in England and Wales during this period, of which 62 per cent (395/636) were caused by *S.enteritidis* PT4 (Table 14). *Cl.perfringens* was implicated in 7 per cent, Rotavirus in 4 per cent, *Sh.sonnei* in 2.5 per cent, O157 VTEC in 2 per cent, *Cryptosporidium* in 2 per cent, and *Campylobacter* in 1.5 per cent of IID outbreaks.

Table 13

GASTROINTESTINAL INFECTIONS, ENGLAND AND WALES: 1996–97 (PROVISIONAL)

Laboratory reports	*Cumulative totals* 1996	1997*	*Percentage change (%)*
All Salmonellas	28,983	32,169	+11
S.enteritidis	18,256	22,806	+25
S.enteritidis PT4	13,137	15,214	+16
S.enteritidis PT6	985	1,666	+69
S.typhimurium	5,542	4,645	−16
S.typhimurium DT104	3,799	2,911	−23
S.virchow	1,185	650	−45
S.virchow PT26	514	200	−61
Campylobacter	43,338	50,247	+16

Laboratory reports	*Cumulative totals* *1996*	 *1997**	*Percentage change* *(%)*
Ecoli O157	660	1,087	+65
Sh.sonnei	1,282	1,465	+14
Rotavirus	14,056	14,892	+6
SRSV	2,437	2,049	−16
Cryptosporidium	3,662	4,321	+18
Giardia	5,340	5,291	−1

*Provisional

Table 14

LABORATORY REPORTS OF GASTROINTESTINAL PATHOGENS COMPARED WITH REPORTS ASSOCIATED WITH GENERAL OUTBREAKS OF INFECTIOUS INTESTINAL DISEASE IN ENGLAND AND WALES 1992–96

Organism	*Number of laboratory reports*	*Laboratory confirmed cases in general outbreaks (%)*	*Number of outbreaks*
All salmonellas	150,713	8,114(5)	637
S.enteritidis PT4	73,635	4,709(6)	395
S.enteritidis other PTs	18,384	1,073(6)	75
S.typhimurium	27,986	1,059(4)	97
S.virchow	8,810	322(4)	20
Other *Salmonella* spp.	21,898	951(4)	50
Campylobacter	209,601	291(0.1)	32
Rotavirus	78,710	374(0.5)	84
Sh.sonnei	33,904	890(3)	50
Cryptosporidium	23,828	1,947(8)	34
SRSV	8,809	2,915(33)	1,023
Cl.perfringens	2,878	683(24)	137
Ecoli O157	2,718	197(7)	42

[3.2.4] **Table 2**

MILK AND MILK PRODUCTS ASSOCIATED OUTBREAKS AND INCIDENTS OF INFECTION; REPORTS TO CDSC, ENGLAND AND WALES 1990–97

Year	*Organism*	*Vehicle of infection*	*Number of outbreaks*	*Number of persons infected*	*Evidence*
1990†	*Salmonella:*				
	typhimurium	Raw milk	1	5	—
	Campylobacter	Raw milk	2	11	—
1991†	*Salmonella:*				
	dublin	Raw milk	1	26	—
	anatum	Raw milk	1	3	—
	enteritidis	Ice cream	3	7	—
	Ecoli O157	Unpasteurised yoghurt	1	16	—
	Campylobacter	Raw milk	1	4	—
	Campylobacter	Bird-pecked bottled milk	1	11	—
1992†	*Salmonella:*				
	enteritidis PT4	Ice cream	1	25	D
	enteritidis PT4	School milk*	1	44	S
	Campylobacter	Pasteurised milk	1	110	S
	Campylobacter	Pasteurised milk	1	72	S
1993	*Salmonella:*				
	enteritidis PT4	Ice cream	1	7	S
	typhimurium DT193	Raw milk	1	13	M,S

Year	*Organism*	*Vehicle of infection*	*Number of outbreaks*	*Number of persons infected*	*Evidence*
	Ecoli O157	Raw milk	1	11	M
	Campylobacter	Raw milk	1	22	D
1994	*Salmonella:*				
	typhimurium DT12	Raw milk	1	11	M
	typhimurium DT104	Raw milk	1	4	M,S
	typhimurium DT104	Pasteurised milk	1	26	M
	Campylobacter	Raw milk	1	23	S
	Str.zooepidemicus	Raw milk	1	4	M
1995	*Salmonella:*				
	typhimurium DT104	Raw milk	1	26	M
	Campylobacter	Raw and pasteurised milk	1	35	S
1996	*Salmonella:*				
	typhimurium DT104	Raw milk	1	5	M
	goldcoast	Unpasteurised cheese	1	75	M,S
	Ecoli O157	Raw milk	1	4	M
	Ecoli O157	Pasteurised milk	1	12	D
1997	*Ecoli* O157	Raw milk	1	6	D
	Ecoli O157	Milk	1	21	D
	Ecoli O157	Unpasteurised cheese	1	5	M

M, Microbiological; S, Statistical; D, Descriptive
† *Campylobacter*: a number of incidents attributed to bird-pecked bottled milk were recorded
* Not known whether raw or pasteurised
Source: PHLS CDSC

25 March 1998

APPENDIX 95

Supplementary Memorandum submitted by the British Poultry Meat Federation Ltd (C146)

You have asked for the BPMF views on the proposed Food Standards Agency in connection with our submission to the Committee on food safety. I attach for the Committee a copy of our written submission to MAFF on the White Paper [not printed].

In general we welcome plans for the Agency, which we hope will improve public confidence in the complete food chain and provide impartial advice on nutrition. We believe consideration should be given to some of the proposed functions being performed outside the Agency to provide checks on its power and independent measurement of its effectiveness.

Poultry meat producers already bear a large burden of charges in respect of licensing hygiene inspections and residue testing, and we are strongly opposed to any further charges being imposed on our sector to fund FSA. We propose that all activities of the FSA and its agencies be funded from taxation, if necessary via a specific tax on food sold to the final consumer.

We would like to see the Agency take a strong role in the area of enforcement: we believe it should take over LACOTS' co-ordination role, and we welcome proposals for monitoring and auditing local authority enforcement activities. Strengthening surveillance activity should apply to imported food as well as home produced.

It will be important to ensure that the national policy on the control of food borne zoonoses does not result in additional requirements for UK producers that are too out of line with those imposed under the EU Zoonoses Directive. We agree that animal welfare and environmental policies should remain outside the Agency's remit.

We would be happy to elaborate on any of the above points or on any aspect of our more detailed submission attached.

25 March 1998

APPENDIX 96

Memorandum submitted by Antec International (C147)

Reduced risk of antimicrobial residues in the final product as medication requirements will be reduced and hence the use of medication in all phases of production will be lower.

Improved meat quality due to reductions in immune stimulation allowing better utilisation of nutrient energy to provide lean tissue growth rather than fat depositions.

Biosecurity can be considered as a whole or in different compartments. Generally it can be split into consideration of inanimate factors (farm buildings, equipment, lorries etc.), and animate factors (animals, people, vermin etc.).

Inanimate Factors

1. Locate sites away from other livestock. It is considered that breeding and genetic development units should probably be sited away from commercial production farms. The ideal distance would probably be between 2 and 5 miles.

2. Avoid building sites near waterways, ponds or lakes utilsied by migratory waterfowl.

3. Avoid putting animals in situations where they would be especially exposed to contamination from wild birds and vermin.

4. Locate houses away from major roads that handle high volumes of animal vehicles (feed lorries, animal transportation lorries etc.).

5. There should be effective waste disposal and removal of used bedding as far away from the site as possible. Waste from other animal enterprises should not be spread near to the site.

6. The areas around and between houses should be constructed of materials and surfaces that can be cleaned and disinfected to reduce transmission of all organic material on vehicles tyres, boots, etc. from the area outside the house into the house. Curbed aprons will prevent washing of contaminated debris to surrounding areas.

7. Locate potable drinking water with low total viable count.

Animate Factors

Important factors to consider are as follows:

1. *People.* This should include employees, service men, lorry drivers, vaccination crews, vets and any other visitors.

   (a) Staff movements should be as limited as possible. This should be a general consideration but must be strictly adhered to when the disease situation on a particular site has deteriorated.

   (b) Exclude all unauthorised persons. Casual visitors should not be given access to sites.

   (c) Control site traffic to a minimum. Where possible all vehicles should be excluded from the site and all visitors should enter on foot through the perimeter fencing.

   (d) For vehicles requiring access to the site (eg for delivering bedding, animals, equipment, feed and live animal haulage) there should be facilities for spray disinfection of the vehicle, wheel's and wheel arches situated at the entrance. All such vehicles should observe standard operating procedures on vehicle cleansing and protective clothing used by drivers.

   (e) All visitors to sites should be provided with adequate protective clothing including disposable boiler suits, footwear and headgear. All visitors should wash their hands prior to visiting livestock.

   (f) For breeding and nucleus farms, at least, a shower facility must be considered.

2. *Animals.* It should be stressed that within any species any animal in that species represents potentially the greatest risk of infection to another member of that same species.

   (a) All incoming animals to farms should be from the highest health status source practicable.

   (b) In this regard the breeding stock farmer or company should have well defined health monitoring procedure, which is routinely audited, and the breeding stock farm should itself have the highest biosecurity precautions.

   (c) Disposal of on farms deaths or culls. On site incineration prevents the need for moving potentially infected carcases off the premises or bringing infection on to a site via personnel collecting carcases from a number of sites.

3. *Site Decontamination*

   (a) Effective cleaning and disinfection reduces the number of pathogens and the weight of disease challenge. Hence it greatly enhances the biosecurity programme.

   (b) Effective cleaning and disinfection can only be achived with sufficient turn round or down time to allow the removal of all bedding and the required contact times for the disinfectant products used prior to re-stocking.

   (c) Continuously populated houses or sites present special problems with regard to the above.

   (d) Cleaning and disinfection should include the houses, surrounding apron and equipment.

   (e) Water systems should be closed with lids on all header tanks. There should be effective cleaning and disinfection of the water system between batches to remove the greasy biofilm from the inside of the system that will harbour and protect pathogens.

   (f) Cleaning and disinfection of the total feed system including bins and delivery systems must be undertaken. Feed delivered to the site must be of high health status with vermin protection. Specification for feed supply should be to exclude all vermin to protect finish feed and stored raw materials especially cereal storage. Raw materials and finished feed should be sampled regularly for Salmonella. Any high risk finished feed or raw material sources identified by such monitoring should cease to be used.

   (g) Efficiency of the cleaning and disinfection area should be audited on a regular basis. This should be by a full visual audit of the cleaning procedure with the support of total viable counts to set benchmarks standard.

   (h) Use only disinfectants with proven broad spectrum efficiency against food poisoning organisms. These products should be used at the manufacturers stated dilutions.

4. *Vectors.* Clearly animate and inanimate vectors will spread many infections.

   (a) Rodents, wild birds, insects and parasites. Maintain an effective audited rodent, wild bird control programme. Consider the use of external audit of the vermin population in the vicinity of a site to enable best control measures. Prevent entry of vermin into animal housing where possible by house design and repair.

   (b) Fomites, equipment and vehicles. Follow the cleansing and disinfection procedures discussed above in relation to site decontamination.

   (c) Water and feed. Use effective closed water systems and disinfection as discussed above. Specifically in relation to feed, ensure that all feed spillages are cleaned up promptly and effectively. Do not move feed from one site to another at site depletion.

CONCLUSIONS

1. A properly implemented biosecurity programme will limit the spread of disease causing organism from one farm to another and within a given farm.

2. It will also reduce the levels of immunosuppressive agents which could increase the susceptibility to other disease.

3. When combined with vaccination, strategic medication (where needed) and good management, a biosecurity programme will reduce clinical disease and the occurrence of pathogenic organisms on the farm to very low levels.

4. Different infectious agents spread by different methods. This may require specific priorities in relation to biosecurity measures.

5. The benefits of reduced clinical disease and levels of pathogenic organisms on farm are as follows:

   (a) Reduced potential zoonotic organisms passing down the food chains.

   (b) Less other food spoilage food organisms present in products derived from that farm.

   (c) Reduced lesions in the carcass which might render all or part of it unfit for human consumption.

   (d) Decreased risks of antimicrobial residues due to building a new farm.

   (e) Improvements in meat quality.

6. Site location and design and density of animals in a given geographical location are of fundamental importance. They should always be considered when building a new farm.

7. On existing farms biosecurity programmes will have to compensate for design location problems. In breeding farms and in high stocked geographical locations the importance of biosecurity increases rapidly.

8. All farms need significant traffic in personnel, feed, stock and equipment on a regular basis. This should be minimised.

9. Vehicles arriving at a farm should be sterilised prior to arrival and also on arrival.

10. Personnel and visitors should be highly controlled. Adequate protective clothing and boots must be supplied. Showers at entry should be considered. Foot dips and hand sanitation should be regularly used when moving around the farm.

11. Priority must be given to generic multiplication sites. Biosecurity programmes must be at the highest level in these sites as errors here are greatly magnified down the production chain to commercial and human food levels.

12. Similar priority should be given to other areas of potential magnification, notably the transport of live animals, in lairage and further on in the slaughterhouse and food processing chain.

13. Effective vermin of wild birds control should be maintained at all levels including breeding and commercial farms and feed mills.

14. Only disinfectants with proven broad spectrum efficacy against all pathogens of interest should be used. Consideration should be given as to potential residues they might generate. They should be used at manufacturers stated dilutions and directions.

15. A full hygiene and biosecurity audit should be undertaken at all farms. This should be reviewed regularly.

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